Go To Table Of Contents

SpeedClave® Steam Sterilizers

Model Numbers:

M7 -011 thru -016

M7 -020 thru -022

Serial Number Prefixes:

MH, MJ, MK, ML, MM, MN, V

V

CE

Service and Parts Manual

To purchase a printed copy of this manual, click on the "Place Order" button below.

Place Order

FOR USE BY MIDMARK TRAINED TECHNICIANS ONLY

SF-1855

Part No. 004-0454-00 Rev. D (07/15/10)

Style B

Back

Next

Table Of Contents

General Information

GENERAL INFORMATION

Symbols i
Ordering Parts i
Model / Serial Number Location i
Weights, Dimensions, Electrical Specifications ii
Model Identification / Compliance Chart iii
Special Tools iv
Warranty Information iv

Section A

OPERATION & TROUBLESHOOTING

Electrical System:
M7 (-011 thru -016) **A-2**
M7 (-020 thru -022) **A-4**
Filling the Chamber A-8
Heat-Up / Sterilization A-14
Venting the Chamber A-20

Section B

TESTING & REPAIR

Checking for Pressure Leaks B-2
Fuse B-3
Bellows B-4
Fill / Vent Valve:
Manual **B-6**
Electronic **B-8**
Temperature Regulator Assy .. B-12
Heating Element B-18
Overheat Thermostats B-22
Pressure Relief Valve B-25
Timer B-26
Timer Buzzer B-30
Temperature Gauge B-31
Door Assembly B-32
Reservoir Tank B-34
Chamber Assembly B-36

Section C

ACCESS PROCEDURES

Removing & Installing:
Covers / Panels C-2
Tray Plate / Rack C-3
Draining / Filling Reservoir C-4

Section D

WIRING DIAGRAMS & SCHEMATICS

***115 VAC models*:**
M7 (-011 / -013 / -014 / -015) **D-2**
M7 (-020 / -022) **D-3**

***230 VAC models*:**
M7 (-012 / -016) **D-4**
M7 (-021) **D-5**

Section E

EXPLODED VIEWS / PARTS LISTS

M7 *(-011 thru -016)* **E-2**
M7 *(-020 thru -022)*: **E-3**

Symbols

Caution
Indicates a potentially hazardous situation which could result in injury if not avoided.

Equipment Alert
Indicates a potentially hazardous situation which could result in equipment damage if not avoided.

Note
Amplifies a procedure, practice, or condition.

✓ Indicates that the component the check mark appears beside should be tested before replacing it.
In Section A, test the components in the order indicated.
(ex. ***1st*** ✓ then, ***2nd*** ✓)

Refer to Section B for component testing procedures.

Ordering Parts

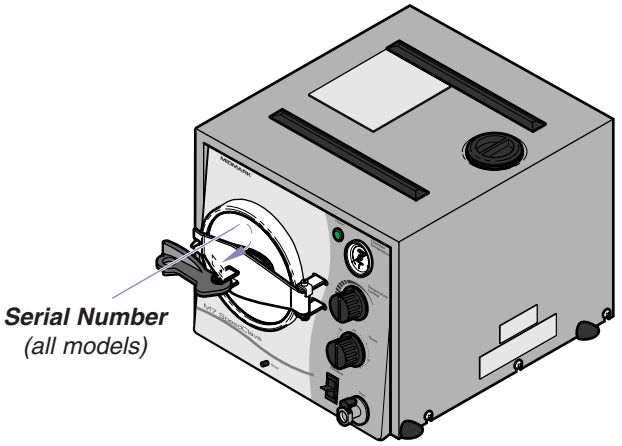
The following information is required when ordering parts:

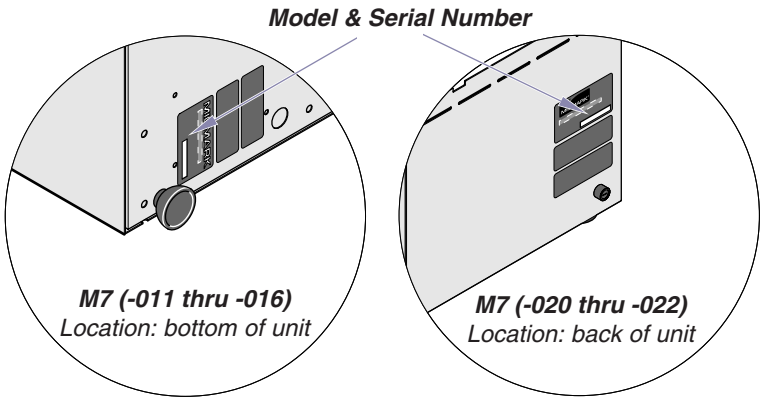
- Serial number & model number
- Part number for desired part.
  [Refer to Section E: Exploded Views / Parts Lists]

<u>Non-warranty</u> parts orders may be faxed to Midmark using the Fax Order Form in the back of this manual.

For warranty parts orders, call Midmark's Technical Service Department with the required information.
Hours: 8:00 am until 5:00 pm EST [Monday - Friday]
Phone: 1-(800)-Midmark

Model / Serial Number Location





MA511502i

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General Information

Weights, Dimensions, Electrical Specifications

> ***ATTENTION***
> *A separate (dedicated) electrical circuit is recommended for all models.*
> *Do not connect to a circuit with other devices, unless the circuit is rated for the additional load.*

M7 (-011 thru -016)

Dimensions *[Refer to illustration]:*
Height *(A)* ..... 12.8 in. (32.5 cm)
Width *(B)* ..... 13.5 in. (34.3 cm)
Depth *(C)* ..... 18.1 in. (46 cm)

Chamber Size: ..... Diameter: 7.5 in. (19 cm)
Depth: 14.25 in. (36.2 cm)

Shipping Carton:
(Length x Width x Height) ..... 24 in. x 16 in. x 16 in.
(61 cm x 40.6 cm x 40.6 cm)

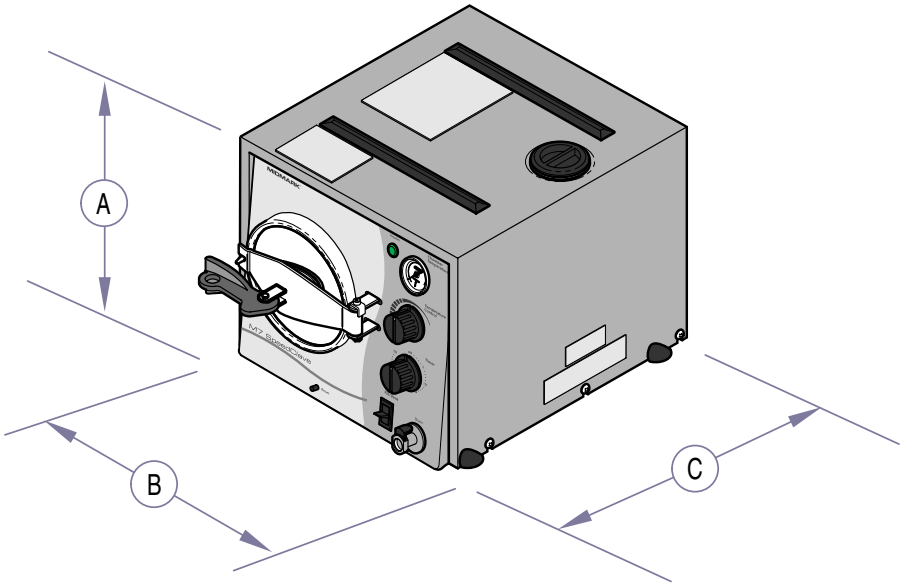
Weight:
Shipping Weight ..... 39 lbs (17.7 kg)
w/reservoir empty ..... 30 lbs (13.6 kg)
w/reservoir full ..... 41.8 lbs (19 kg)

Reservoir Capacity: ..... Approx. 1.3 gallon (4.9 liters) at FULL mark

Pressure Relief Valve:
opens at approximately: ..... 34 psi (234 kPa)

Electrical Requirements: ..... *[See Model Identification / Compliance Chart]*

Power Consumption:
100 VAC models ..... 1150 watts, 12 amps @ 100 VAC
115 VAC models ..... 1150 watts, 10 amps @ 120 VAC
230 VAC models ..... 1150 watts, 5 amps @ 240 VAC



MA670600i

M7 (-020 thru -022)

Dimensions *[Refer to illustration]:*
Height *(A)* ..... 13 in. (33 cm)
Width *(B)* ..... 14 in. (35.6 cm)
Depth *(C)* ..... 19 in. (48.3 cm)

Chamber Size: ..... Diameter: 7.5 in. (19 cm)
Depth: 14.25 in. (36.2 cm)

Shipping Carton:
(Length x Width x Height) ..... 24 in. x 16 in. x 16 in.
(61 cm x 40.6 cm x 40.6 cm)

Weight:
Shipping Weight ..... 39 lbs (17.7 kg)
w/reservoir empty ..... 30 lbs (13.6 kg)
w/reservoir full ..... 41.8 lbs (19 kg)

Reservoir Capacity: ..... Approx. 1.3 gallon (4.9 liters) at FULL mark

Pressure Relief Valve:
opens at approximately: ..... 34 psi (234 kPa)

Electrical Requirements: ..... *[See Model Identification / Compliance Chart]*

Power Consumption:
115 VAC models ..... 1300 watts, 10 amps @ 115 VAC
230 VAC models ..... 1300 watts, 5 amps @ 230 VAC

Fuse *(back of unit)*:
115 VAC models ..... 12 amp, 250 V, Fast-Acting, 1/4" x 1-1/4"
230 VAC models ..... 8 amp, 250 V, Fast-Acting, 5 x 20 mm

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General Information

Model Identification / Compliance Chart

Model	Description	Serial Number Prefixes	Complies To:				Electrical Ratings:		
			UL 544	UL 61010A-1 61010-2-041	CAN/CSA C22.2, #151	CAN/CSA C22.2, #1010 #1010.2-041-96	VAC	Amps	Cycles (Hz)
M7-011	Ritter M7 Sterilizer *(115 VAC)*	MH & V	X		X		115	10	60
M7-012	Midmark M7 Sterilizer *(230 VAC)*	MJ & V	X		X		220 / 240	5	50
M7-013	Midmark M7 Sterilizer *(100 VAC)*	MK & V	X		X		100	12	60
M7-014	Midmark M7 Sterilizer *(115 VAC)*	ML & V	X		X		115	10	60
M7-015	Dabi Alante M7 Sterilizer *(115 VAC)*	MM & V	X		X		115	10	60
M7-016	Dabi Alante M7 Sterilizer *(230 VAC)*	MN & V	X		X		230	5	60
M7-020	Midmark M7 Sterilizer *(115 VAC)*	V		X		X	115	10	60
M7-021	Midmark M7 Sterilizer *(230 VAC)*	V		X		X	230	5	50
M7-022	Ritter M7 Sterilizer *(115 VAC)*	V		X		X	115	10	60

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General Information

Special Tools

This table lists all special tools needed to diagnose and repair the sterilizer.

Special Tool	Manfacturer	Part Number	Purpose of Tool
Digital Multimeter	Commercially available	any type	To perform continuity / voltage checks
Digital Thermometer	Commercially available	any type	To verify chamber temperature

Warranty Information

SCOPE OF WARRANTY

Midmark Corporation ("Midmark") warrants to the original purchaser its new Alternate Care products and components (except for components not warranted under "Exclusions") manufactured by Midmark to be free from defects in material and workmanship under normal use and service. Midmark's obligation under this warranty is limited to the repair or replacement, at Midmark's option, of the parts or the products the defects of which are reported to Midmark within the applicable warranty period and which, upon examination by Midmark, prove to be defective.

APPLICABLE WARRANTY PERIOD

The applicable warranty period, measured from the date of delivery to the original user, shall be one (1) year for all warranted products and components.

EXCLUSIONS

This warranty does not cover and Midmark shall not be liable for the following: (1) repairs and replacements because of misuse, abuse, negligence, alteration, accident, freight damage, or tampering; (2) products which are not installed, used, and properly cleaned as required in the Midmark "Installation" and or "Installation / Operation Manual for this applicable product. (3) products considered to be of a consumable nature; (4) accessories or parts not manufactured by Midmark; (5) charges by anyone for adjustments, repairs, replacement parts, installation, or other work performed upon or in connection with such products which is not expressly authorized in writing in advance by Midmark.

EXCLUSIVE REMEDY

Midmark's only obligation under this warranty is the repair or replacement of defective parts. Midmark shall not be liable for any direct, special, indirect, incidental, exemplary, or consequen tial damages or delay, including, but not limited to, damages for loss of profits or loss of use.

NO AUTHORIZATION

No person or firm is authorized to create for Midmark any other obligation or liability in connection with the products.

ADDITIONAL INFORMATION

Failure to follow the guidelines listed below will void the warranty and/or render the table unsafe for use.

- If a malfunction is detected, do not use the table until necessary repairs are made.
- Do not attempt to disassemble table, replace components, or perform adjustments unless you are a Midmark authorized service technician.
- Do not use another manufacturer's parts to replace malfunctioning components. Use only Midmark replacement parts

THIS WARRANTY IS MIDMARK'S ONLY WARRANTY AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED. MIDMARK MAKES NO IMPLIED WARRANTIES OF ANY KIND INCLUDING ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE. THIS WARRANTY IS LIMITED TO THE REPAIR OR REPLACEMENT OF DEFECTIVE PARTS.

SF-1487 REV. A1

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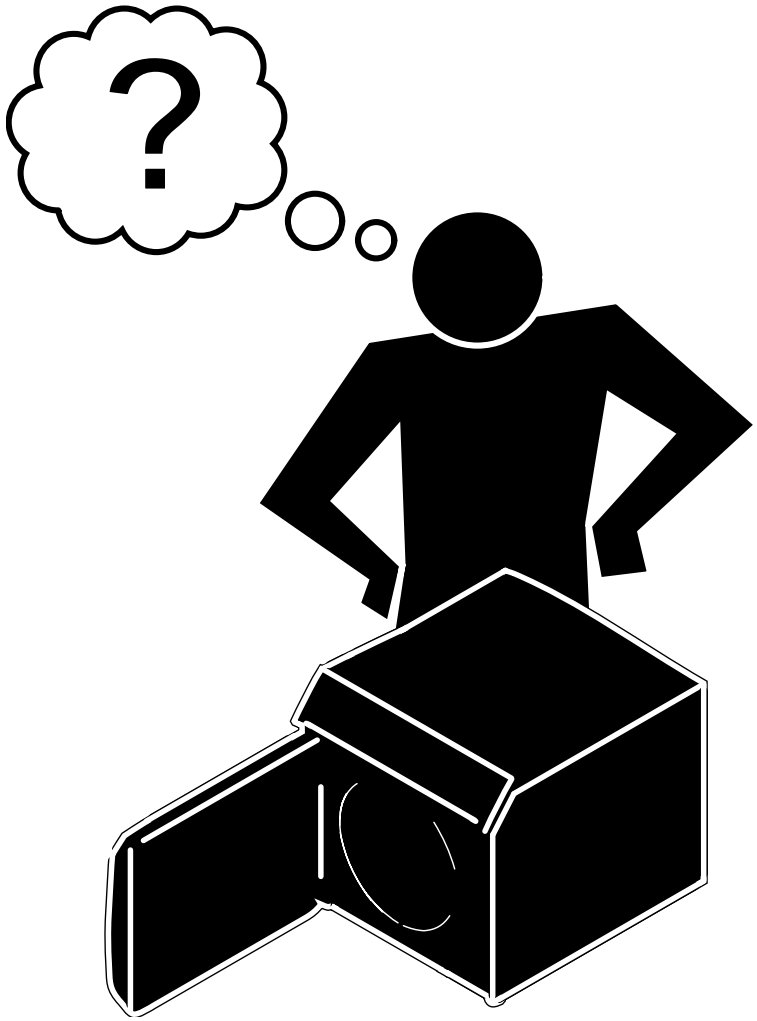
Section A

Operation & Troubleshooting

Mode	Page
Electrical System:	
M7 (-011 thru -016)	A-2
M7 (-020 thru -022)	A-4
Filling the Chamber	A-8
Heat Up / Sterilization	A-14
Venting the Chamber	A-20



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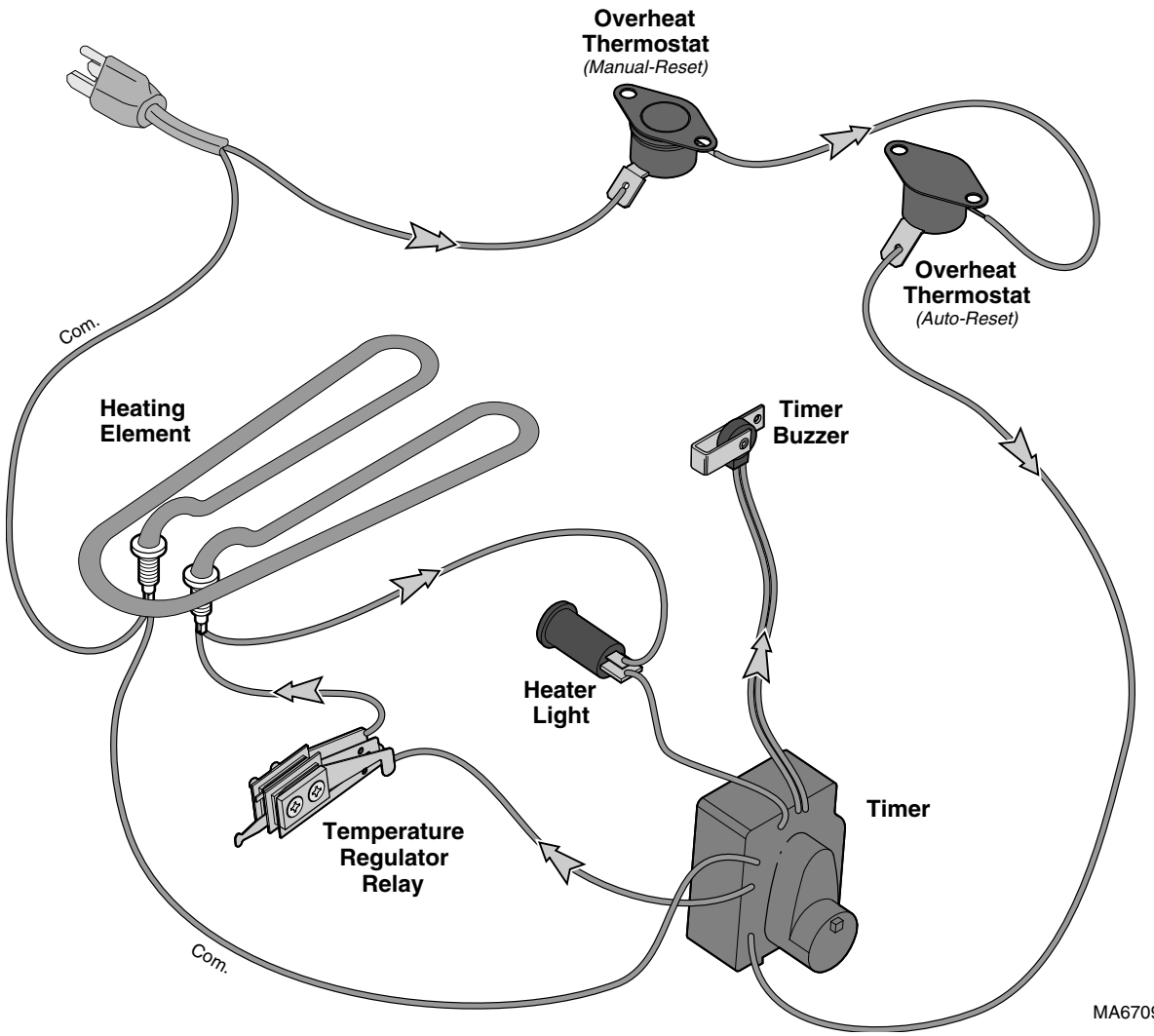
Operation & Troubleshooting

Electrical System - [M7 (-011 thru -016)]

The illustration shows all of the electrical components of the sterilzer.
Refer to the following page for a detailed description of current flow.



Troubleshooting
[Electrical System]

Problem: **Page**

Heating element does not turn ON:
- *Heater light is OFF* A-6
- *Heater light is ON* A-7

Sterilizer shuts down before timer setting expires A-17

Timer buzzer does not function A-19

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Electrical System - [M7 (-011 thru -016)]

With the power cord properly connected...

Overheat Thermostats

Current *(115 / 230 VAC)* continuously flows thru the two *(normally closed)* overheat thermostats. This current supplies power to the timer.

If either thermostat opens *(overheat or malfunction),* voltage is removed from the timer until the thermostat is reset or replaced.

NOTE

The Manual-Reset Thermostat contacts open at approximately 285°F (140°C). To reset, allow unit to cool, then press RESET button on front of unit.

The Auto-Reset Thermostat contacts open at approximately 295°F (146°C). This thermostat automatically resets when the unit cools to approx. 265°F (129°C).

Timer

Current is supplied to the timer thru the two overheat thermostats.

When the timer is turned ON...

Timer

The *(normally open)* timer contacts close, and voltage is supplied to the timer motor and the temperature regulator relay. The timer motor runs, and begins to count down the time it was set for.
(The contacts to the timer buzzer remain open).

Temperature Regulator Relay

Current is supplied to the temperature regulator relay thru the timer. If the chamber temperature is lower than the temperature knob setting*, the relay contacts are closed. When these contacts are closed, current flows thru the relay to the heating element and the heater light.

The diaphragm cup of the relay expands as the temperature & pressure inside the chamber increase. When the chamber temperature reaches the temperature knob setting, the relay contacts open, and voltage is removed from the heating element & heater light.

[The minimum temperature knob setting is approx. 220°F (104°C)]*

When the timer is turned ON (continued)...

Heater Light & Heating Element

When the contacts of the temperature regulator relay are closed, current is supplied to the heater light and the heating element.

As the relay contacts open and close, the heating element cycles ON / OFF. This continues until the timer setting expires.

The heater light is illuminated whenever the heating element is ON.

When the timer setting expires...

Timer & Timer Buzzer

The contacts to the temperature regulator relay open, stopping the current flow to the heater light & heating element.

The contacts to the timer buzzer close and current flows to the timer buzzer. When voltage is applied, the buzzer emits an audible signal.

The contacts to the timer motor remain closed for one minute. After one minute the contacts to the timer motor & the timer buzzer open, stopping the current flow to these two components.

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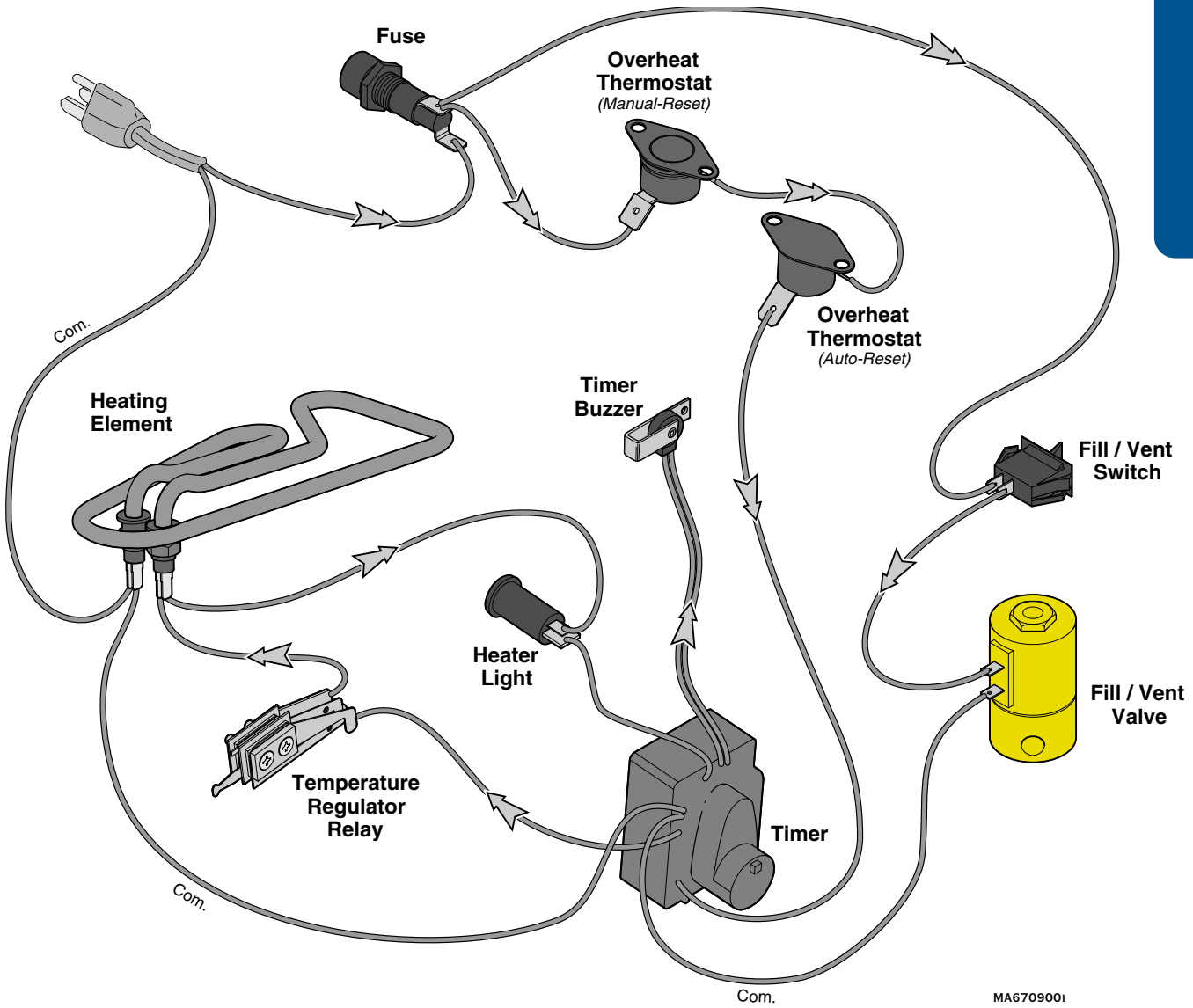
Operation & Troubleshooting

Electrical System - [M7 (-020 thru -022)]

The illustration shows all of the electrical components of the sterilzer.
Refer to the following page for a detailed description of current flow.



Troubleshooting
[Electrical System]

Problem:	Page
When Fill/Vent Switch is pressed:	
- Chamber does not FILL	A-11
- Chamber does not VENT	A-23
Heating element does not turn ON:	
- Heater light is OFF	A-6
- Heater light is ON	A-7
Sterilizer shuts down before timer setting expires	A-17
Timer buzzer does not function	A-19

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Electrical System - [M7 (-020 thru -022)]

With the power cord properly connected...

Fuse

Current *(115 / 230 VAC)* continuously flows thru the fuse located in the back of the unit. This current supplies power to the fill / vent switch and the overheat thermostats.

Fill / Vent Switch

Current is supplied to the fill / vent switch thru the fuse.

Overheat Thermostats & Timer

Current is supplied to the two overheat thermostats thru the fuse. Current continuously flows thru the thermostats to the timer.

If either thermostat opens *(overheat or malfunction),* voltage is removed from the timer until the thermostat is reset or replaced.

NOTE

The Manual-Reset Thermostat contacts open at approximately 285°F (140°C). To reset, allow unit to cool, then press RESET button on front of unit.

The Auto-Reset Thermostat contacts open at approximately 295°F (146°C). This thermostat automatically resets when the unit cools to approx. 265°F (129°C).

When filling the chamber (pressing the fill/vent switch)...

Fill / Vent Switch

The contacts of the *(normally open)* switch close. When the contacts of the switch are closed, current is supplied to the fill / vent valve.

Fill / Vent Valve

When current is applied to the *(normally closed)* valve, the valve opens. When the valve is open, water flows into the chamber.

When the Timer is turned ON...

Timer

The *(normally open)* timer contacts close, and voltage is supplied to the timer motor and the temperature regulator relay. The timer motor runs, and begins to count down the time it was set for.
(The contacts to the timer buzzer remain open).

When the timer is turned ON (continued)...

Temperature Regulator Relay

Current is supplied to the temperature regulator relay thru the timer. If the chamber temperature is lower than the temperature knob setting*, the relay contacts are closed. When these contacts are closed, current flows thru the relay to the heating element and the heater light.
[The minimum temperature knob setting is approx. 220°F (104°C)]*

The diaphragm cup of the relay expands as the temperature & pressure inside the chamber increase. When the chamber temperature reaches the temperature knob setting, the relay contacts open, and voltage is removed from the heating element & heater light.

Heater Light & Heating Element

When the contacts of the temperature regulator relay are closed, current is supplied to the heater light and the heating element. As the relay contacts open and close, the heating element cycles ON / OFF. This continues until the timer setting expires. The heater light is illuminated whenever the heating element is ON.

When the timer setting expires...

Timer & Timer Buzzer

The contacts to the temperature regulator relay open, stopping the current flow to the heater light & heating element.

The contacts to the timer buzzer close and current flows to the timer buzzer. When voltage is applied, the buzzer emits an audible signal.

The contacts to the timer motor remain closed for one minute. After one minute the contacts to the timer motor & the timer buzzer open, stopping the current flow to these two components.

When pressing the Fill / Vent Switch (to VENT the chamber)...

Fill / Vent Switch

The contacts of the *(normally open)* switch close. When the contacts of the switch are closed, current is supplied to the fill / vent valve.

Fill / Vent Valve

When current is applied to the *(normally closed)* valve, the valve opens. When the valve is open, steam is released thru the condensing coil & the water is returned to the reservoir .

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Operation & Troubleshooting

Problem: *Heating element does not turn ON. [Heater light is OFF]*

Refer To:	Page
Operation & Troubleshooting	A-1
Component Testing / Repair	B-1
Access Procedures	C-1
Wiring Diagrams	D-1
Exploded Views / Part Numbers	E-1

Loose / Damaged Wire Connections — 4th ✓
Check all wiring connections.
(Power cord, overheat thermostats, etc.)

M7 (-020 thru -022) only
Fuse — 3rd ✓

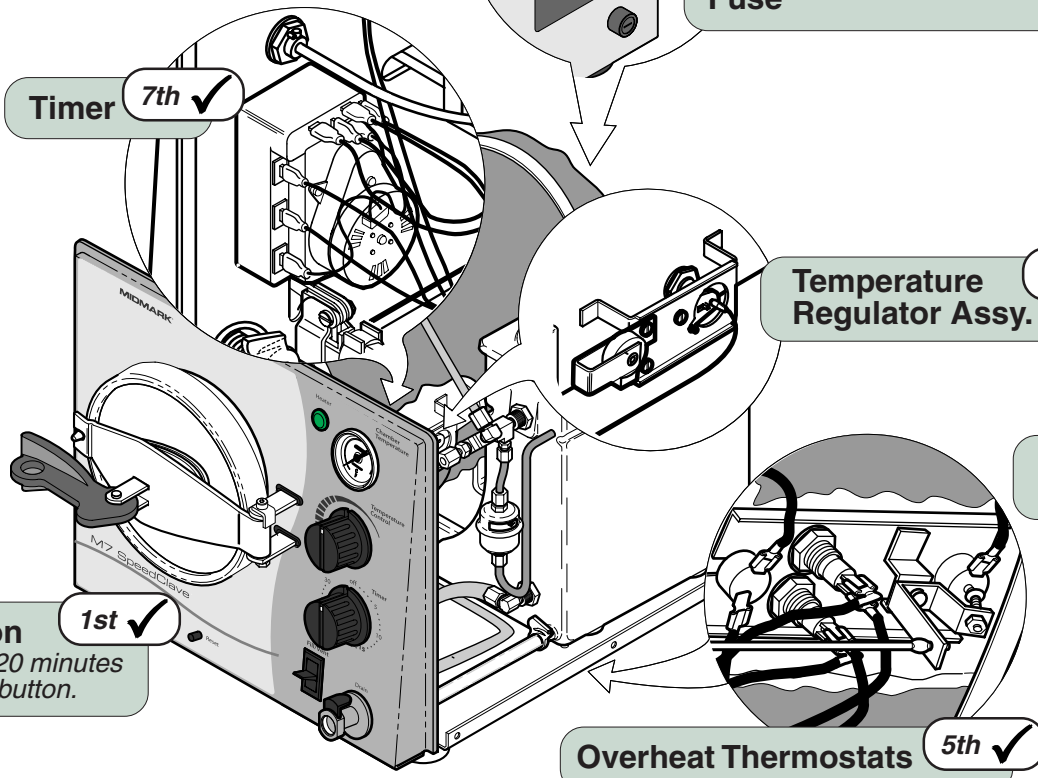
Timer — 7th ✓

Temperature Regulator Assy. — 6th ✓

Check supply voltage — 2nd ✓
(A dedicated circuit is recommended)

Press RESET button — 1st ✓
Allow unit to cool for 15-20 minutes before pressing RESET button.

Overheat Thermostats — 5th ✓



MA670800i

Electrical System

Models:	M7 (-011 thru -016)	M7 (-020 thru -022)		
Serial Numbers:	all	all		

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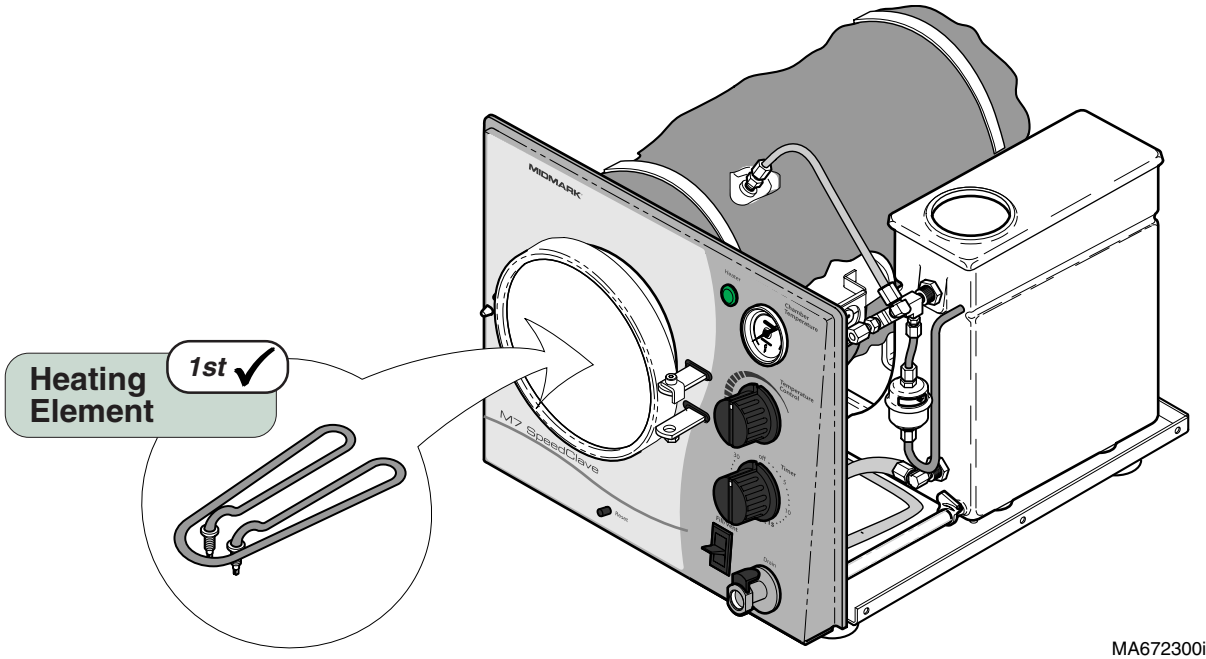
Operation & Troubleshooting

Problem: *Heating element does not turn ON.*
[Heater light is ON]

Refer To:	Page
Operation & Troubleshooting	A-1
Component Testing / Repair	B-1
Access Procedures	C-1
Wiring Diagrams	D-1
Exploded Views / Part Numbers	E-1



MA672300i

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Operation & Troubleshooting

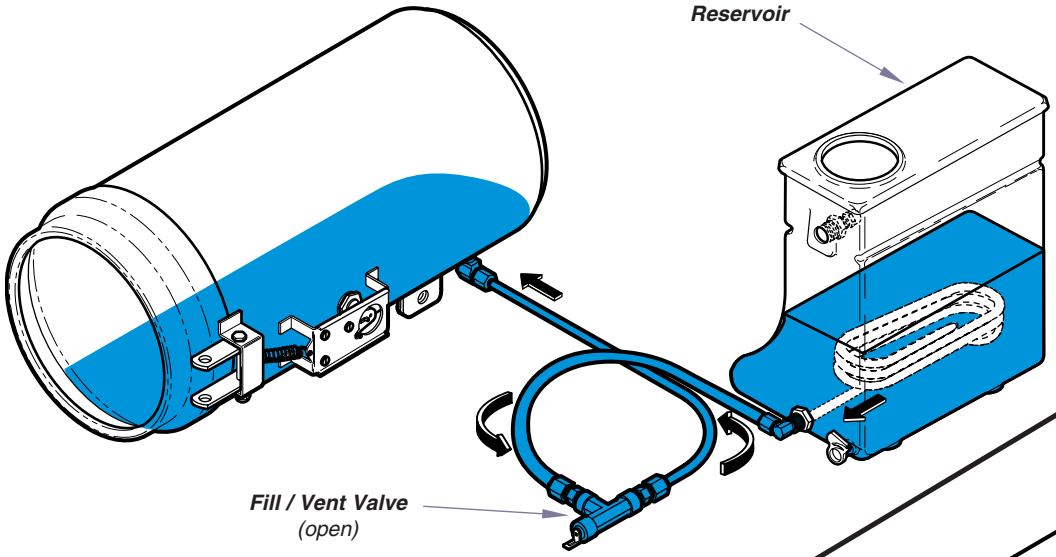
Filling the Chamber

The illustrations show the water flow when filling the chamber.
Refer to the following page for a detailed description of this process.

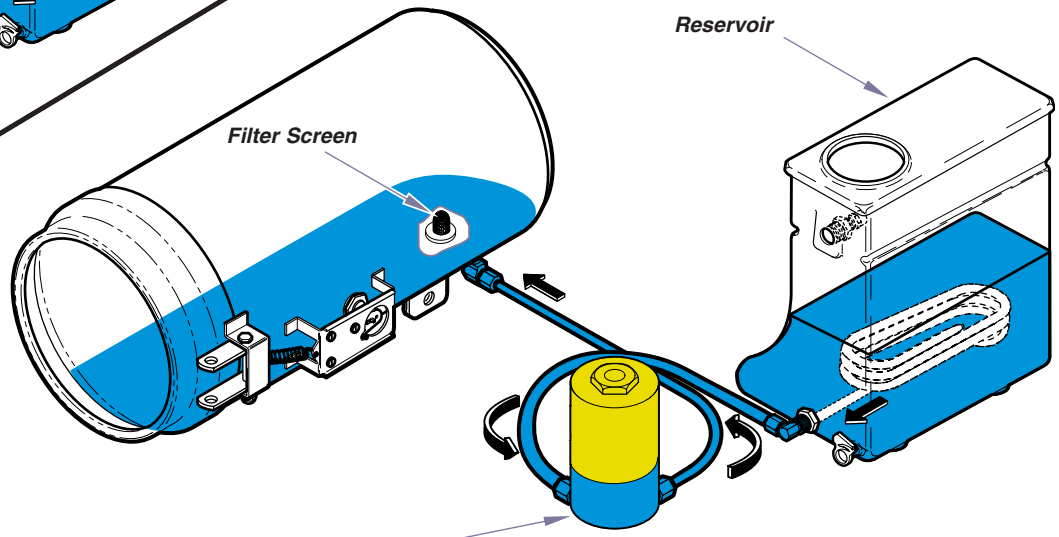
Troubleshooting
[Filling the Chamber]

Problem:	**Page**
Chamber does not fill:	
- M7 (-011 thru -016)	A-10
- M7 (-020 thru -022)	A-11
Water continuously flows into chamber:	
- M7 (-011 thru -016)	A-12
- M7 (-020 thru -022)	A-13

M7 (-011 thru -016)



M7 (-020 thru -022)



= Water

Filling the Chamber

Models:	***M7 (-011 thru -016)***	***M7 (-020 thru -022)***		
Serial Numbers:	***all***	***all***		

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Filling the Chamber

M7 (-011 thru -016)

When the Fill / Vent Lever is pressed and held...

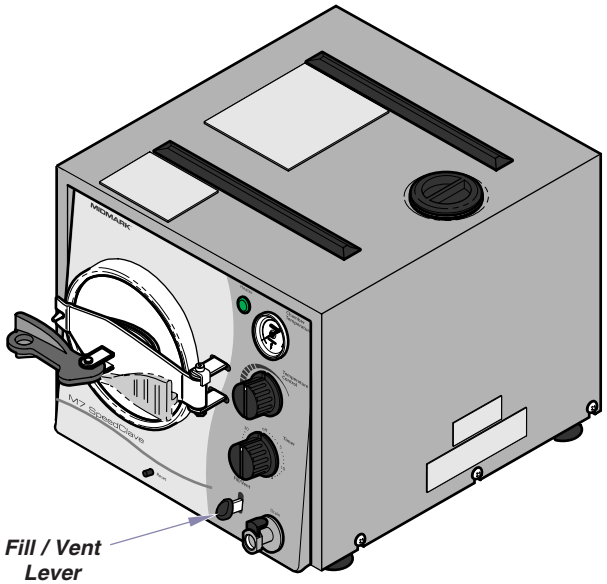
Fill Vent Valve

The *(normally closed - manual)* valve opens. When the valve is open, water from the reservoir flows thru the fill / vent valve into the chamber.

When the Fill / Vent Lever is released...

Fill / Vent Valve

The valve closes, and stops the flow of water into the chamber.



M7 (-020 thru -022)

When the Fill / Vent Switch is pressed and held...

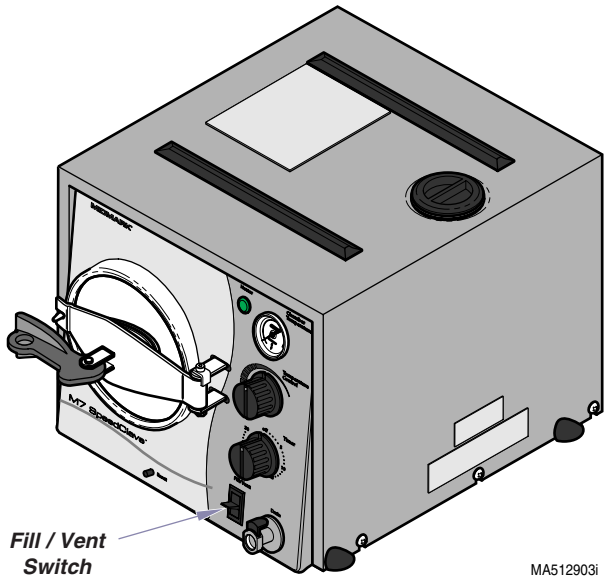
Fill / Vent Switch & Valve

Current *(line voltage)* flows thru the fill/vent switch to the fill/vent valve. When voltage is applied, the *(normally closed)* fill / vent valve opens. When the valve is open, water from the reservoir flows into the chamber thru the valve and filter screen.

When the Fill / Vent Switch is released...

Fill / Vent Switch & Valve

The fill/vent switch opens, stopping the current flow to the fill/vent valve. When voltage is removed, the valve closes. When the valve closes, water stops flowing into the chamber.



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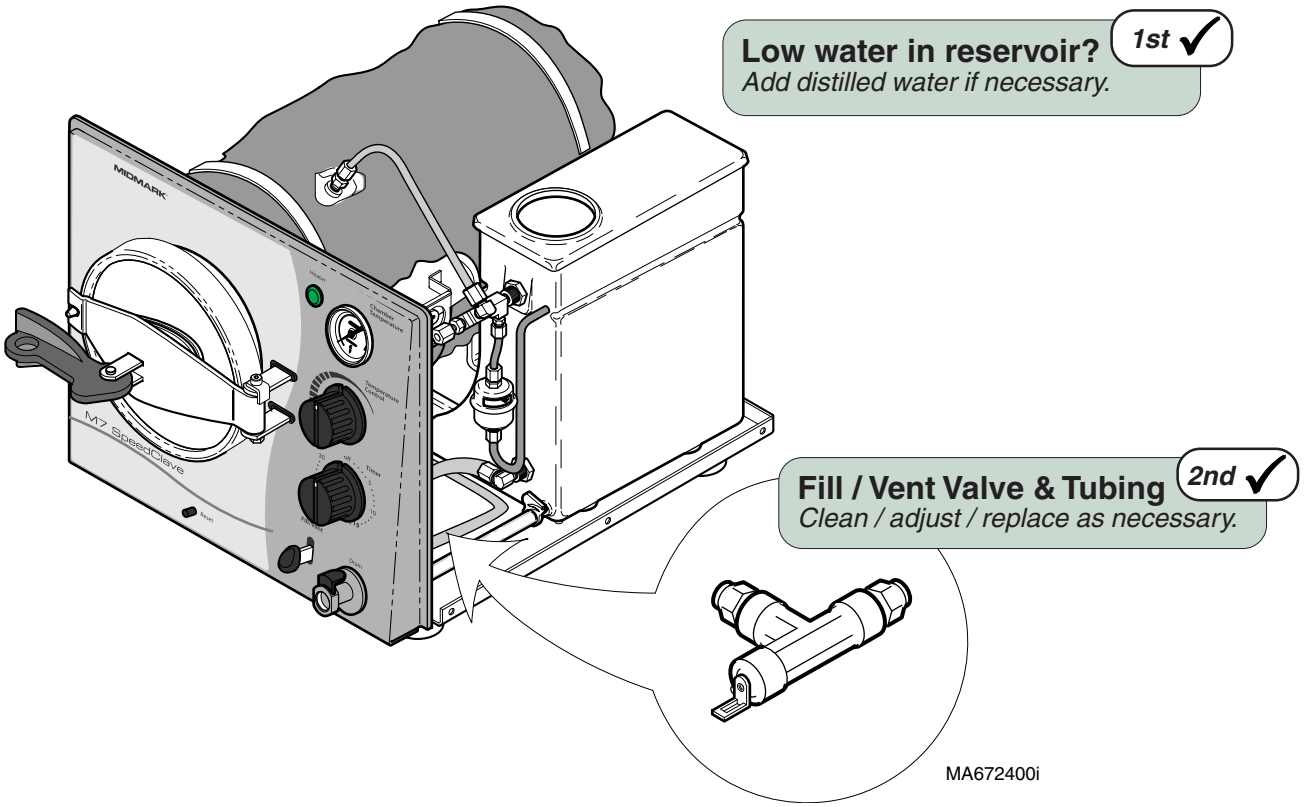
Operation & Troubleshooting

Problem: *Chamber does not fill.*

Refer To:	Page
Operation & Troubleshooting	A-1
Component Testing / Repair	B-1
Access Procedures	C-1
Wiring Diagrams	D-1
Exploded Views / Part Numbers	E-1



Filling the Chamber

Models:	M7 (-011 thru -016)			
Serial Numbers:	all			

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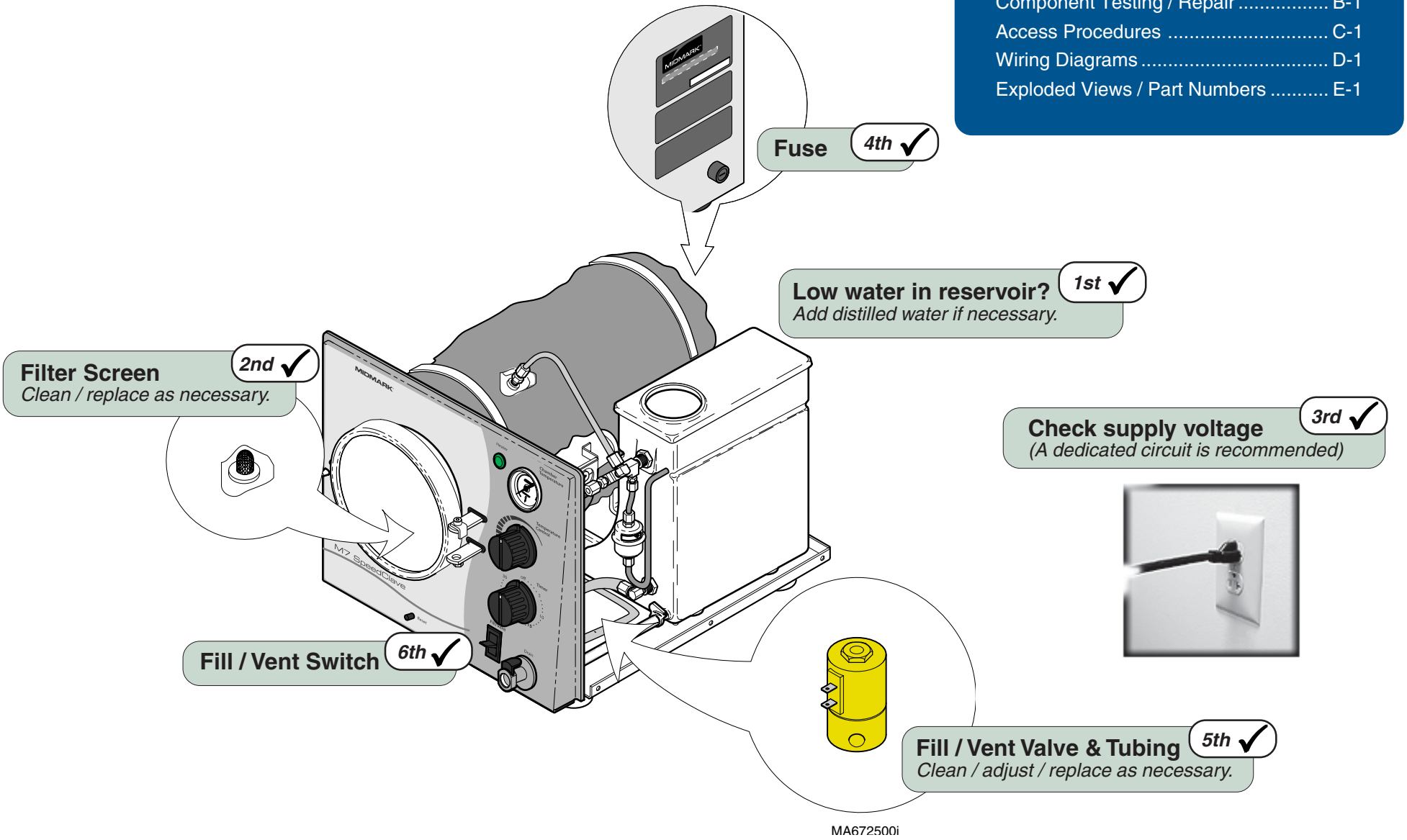
Operation & Troubleshooting

Problem: *Chamber does not fill.*

Refer To:	Page
Operation & Troubleshooting	A-1
Component Testing / Repair	B-1
Access Procedures	C-1
Wiring Diagrams	D-1
Exploded Views / Part Numbers	E-1



MA672500i

Models: M7 (-020 thru -022)
Serial Numbers: all

Filling the Chamber

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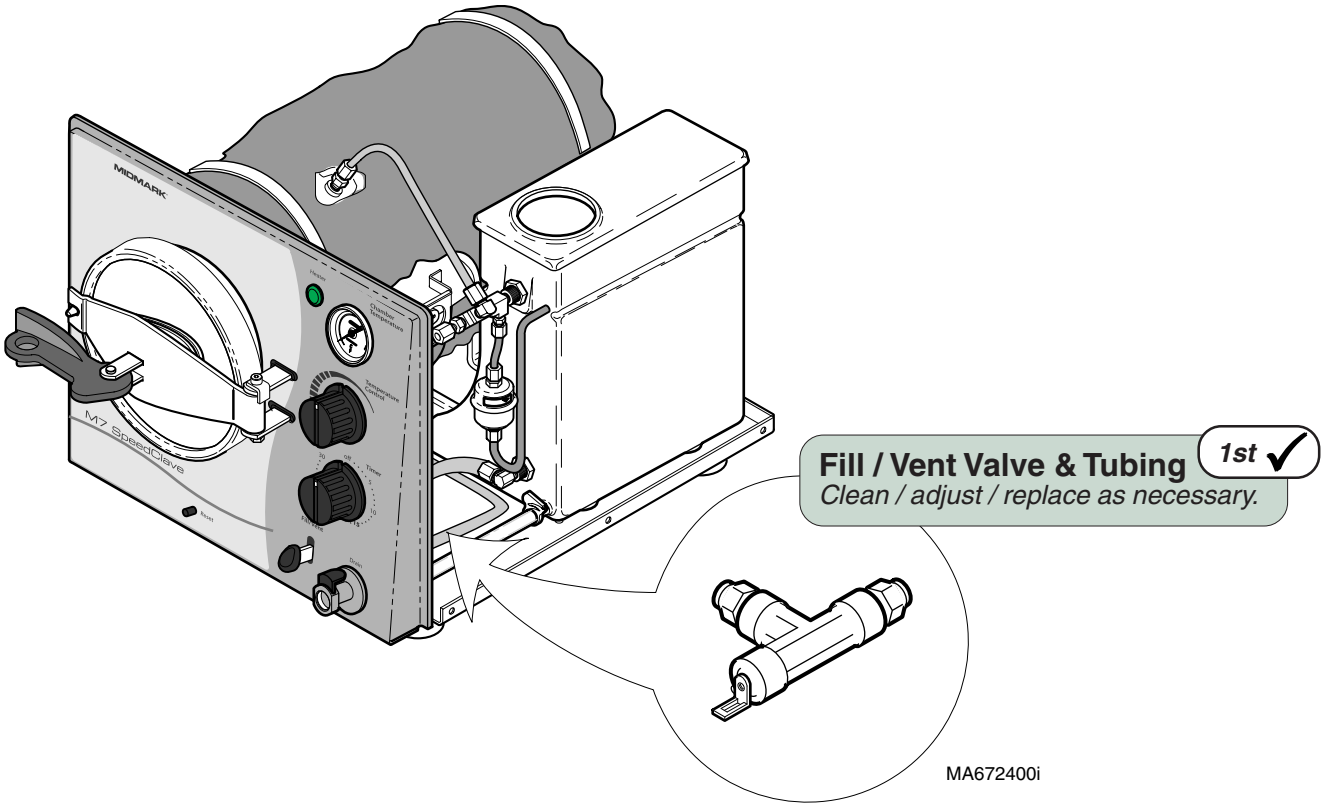
Operation & Troubleshooting

Problem: *Water continuously flows into chamber.*

Refer To:	Page
Operation & Troubleshooting	A-1
Component Testing / Repair	B-1
Access Procedures	C-1
Wiring Diagrams	D-1
Exploded Views / Part Numbers	E-1



Filling the Chamber

Models:	M7 (-011 thru -016)			
Serial Numbers:	all			

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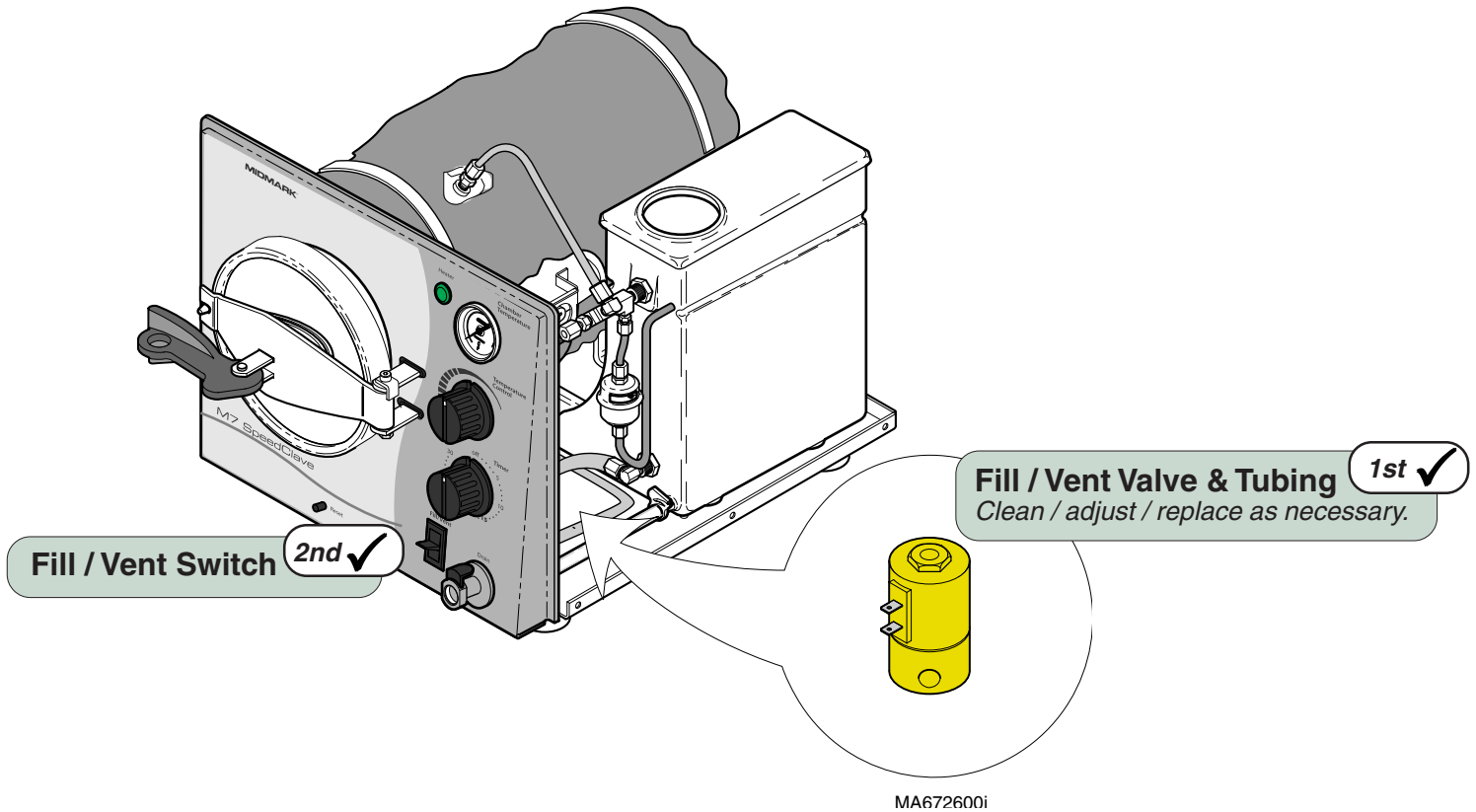
Operation & Troubleshooting

Problem: *Water continuously flows into chamber.*

Refer To: **Page**

Operation & Troubleshooting A-1
Component Testing / Repair B-1
Access Procedures C-1
Wiring Diagrams D-1
Exploded Views / Part Numbers E-1



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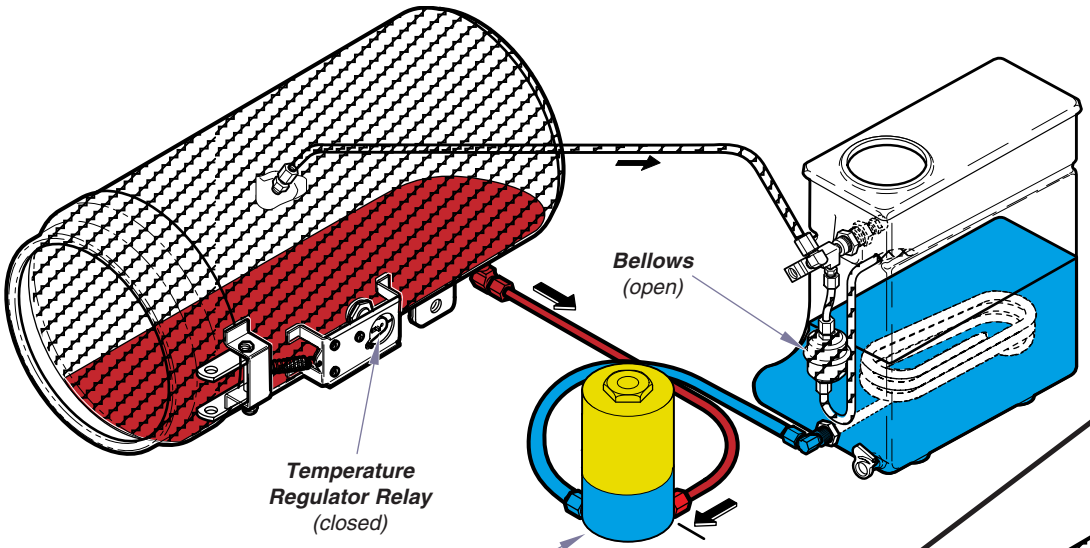
Operation & Troubleshooting

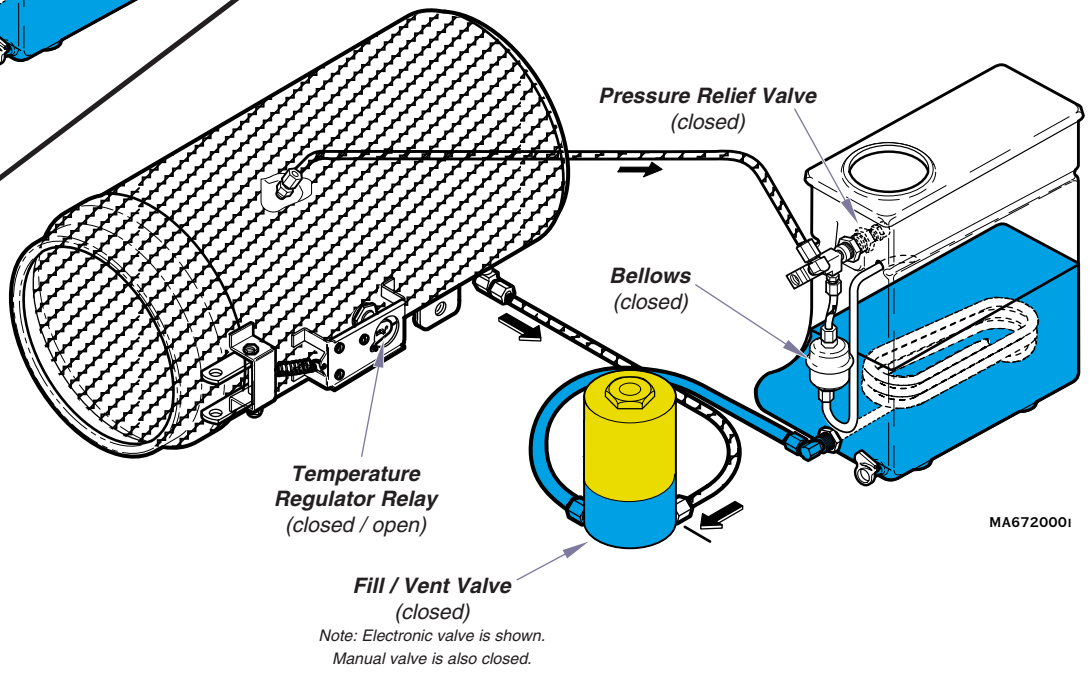
Heat Up / Sterilization

The illustrations show the water / steam flow during heat up & sterilization.
Refer to the following page for a detailed description of this process.

Heat-Up



Sterilization



= Water

= Heated Water

= Steam

Troubleshooting
[Heat-Up / Sterilization]

Problem:	Page
Heating element does not turn ON:	
- Heater light is OFF	A-6
- Heater light is ON	A-7
Heating element turns ON, but does not reach required temperature	A-16
Sterilizer shuts down before timer setting expires	A-17
Biological test strips indicate items are not sterile	A-18
Timer buzzer does not function	A-19

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Heat-Up / Sterilization

When the timer is turned ON...

Timer

The *(normally open)* timer contacts close, and voltage is supplied to the timer motor and the temperature regulator relay. The timer motor runs, and begins to count down the time it was set for.
(The contacts to the timer buzzer remain open).

Temperature Regulator Relay

Current is supplied to the temperature regulator relay thru the timer. If the chamber temperature is lower than the temperature knob setting*, the relay contacts are closed. When these contacts are closed, current flows thru the relay to the heating element and the heater light.
[The minimum temperature knob setting is approx. 220°F (104°C)]*

The diaphragm cup of the relay expands as the temperature & pressure inside the chamber increase. When the chamber temperature reaches the temperature knob setting, the relay contacts open, and voltage is removed from the heating element & heater light.

Heater Light & Heating Element

When the contacts of the temperature regulator relay are closed, current is supplied to the heater light and the heating element.

As the relay contacts open and close, the heating element cycles ON / OFF. This continues until the timer setting expires.

The heater light is illuminated whenever the heating element is ON.

Bellows & Pressure Relief Valve

Heat-Up:
As the water in the chamber begins to boil, air is forced out of the chamber. This air passes thru the bellows into the reservoir.

Sterilization:
When pure steam begins to flow thru the bellows, the bellows closes allowing pressure to build in the chamber. If the pressure in the chamber exceeds 34 psi (234 kPa), the pressure relief valve opens to prevent unsafe conditions.

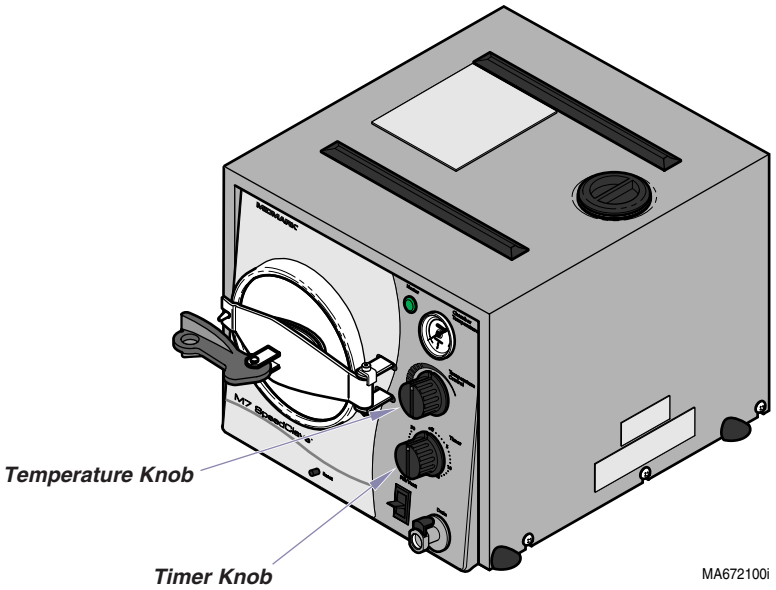
When the timer setting expires...

Timer & Timer Buzzer

The contacts to the temperature regulator relay open, stopping the current flow to the heater light & heating element.

The contacts to the timer buzzer close and current flows to the timer buzzer. When voltage is applied, the buzzer emits an audible signal.

The contacts to the timer motor remain closed for one minute. After one minute the contacts to the timer motor & the timer buzzer open, stopping the current flow to these two components.



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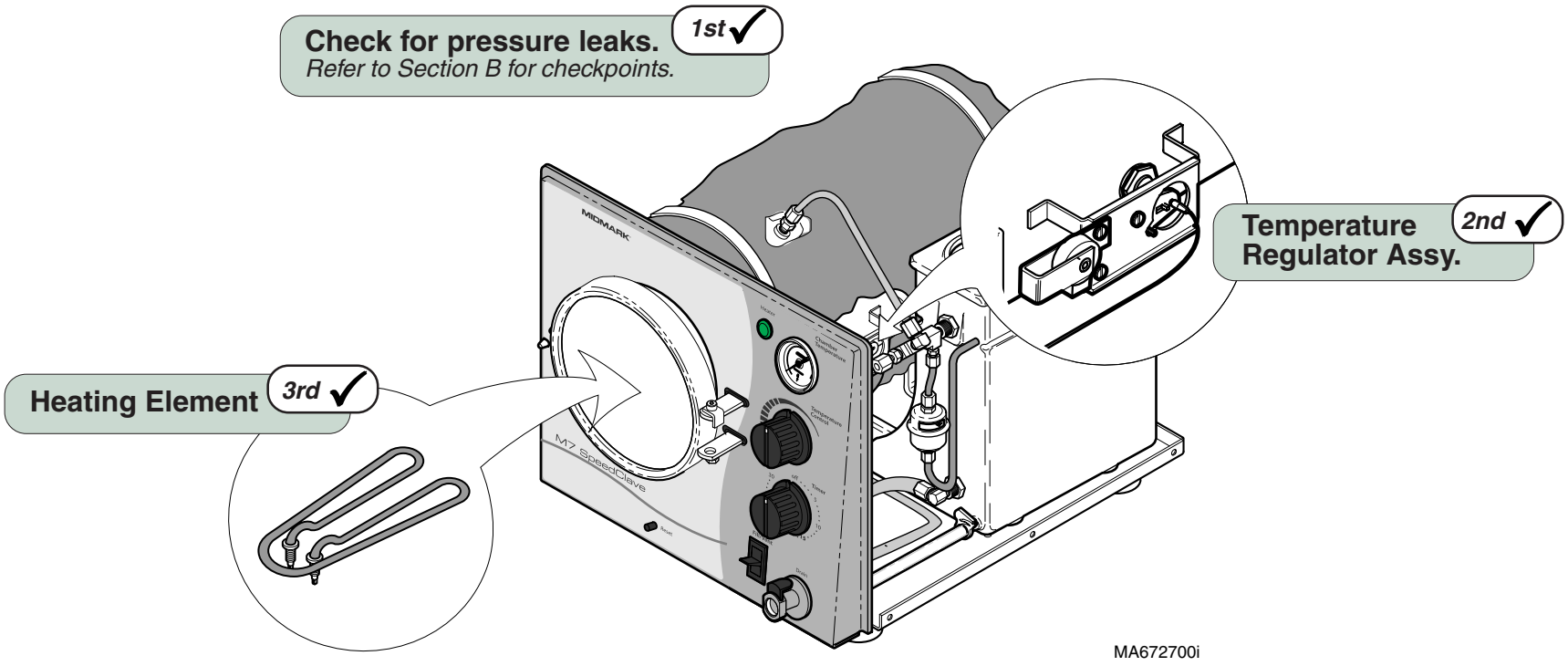
Operation & Troubleshooting

Problem: *Heating element turns ON, but does not reach required temperature. [Heater light is ON]*

Refer To:	Page
Operation & Troubleshooting	A-1
Component Testing / Repair	B-1
Access Procedures	C-1
Wiring Diagrams	D-1
Exploded Views / Part Numbers	E-1



Heat-Up / Sterilization

Models:	M7 (-011 thru -016)	M7 (-020 thru -022)		
Serial Numbers:	all	all		

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Operation & Troubleshooting

Problem: *Sterilizer shuts down before timer setting expires.*

Refer To:	Page
Operation & Troubleshooting	A-1
Component Testing / Repair	B-1
Access Procedures	C-1
Wiring Diagrams	D-1
Exploded Views / Part Numbers	E-1

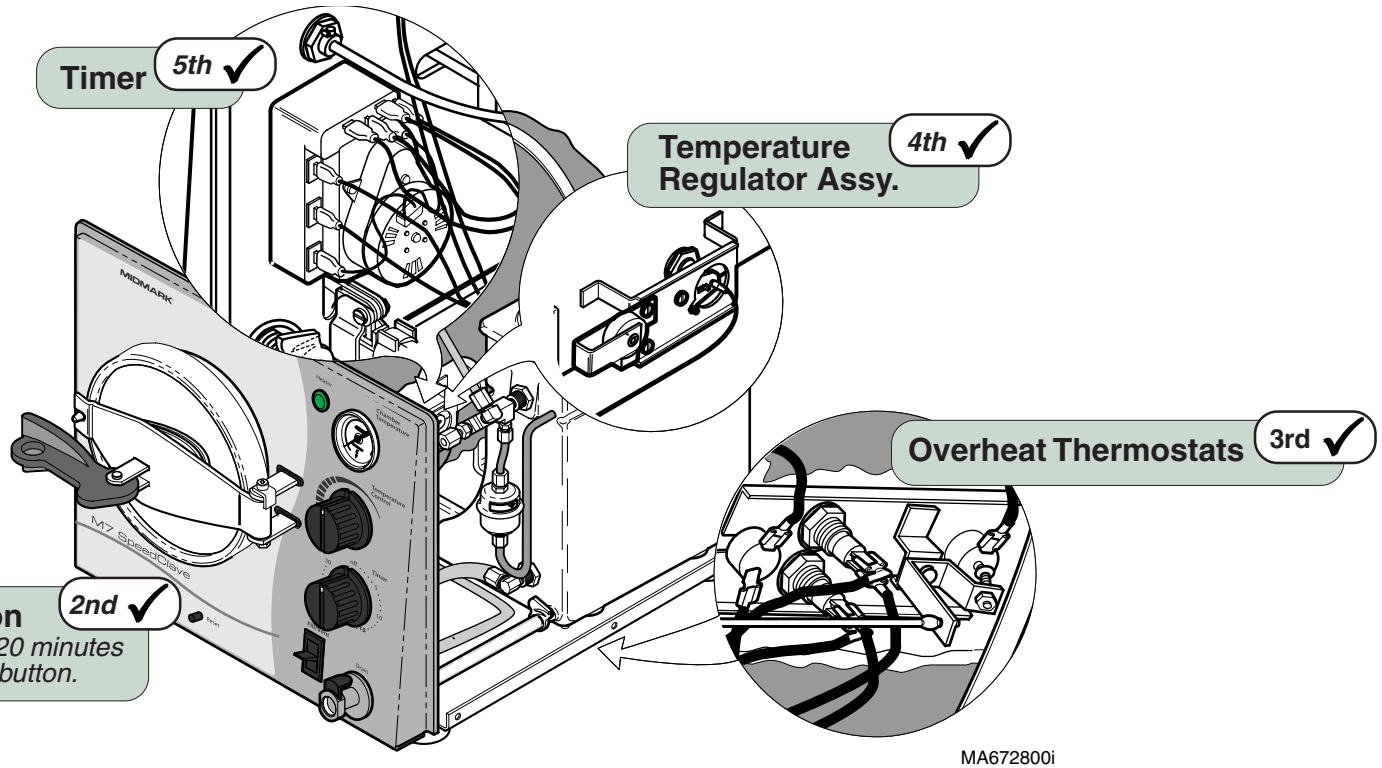
Check for pressure leaks. 1st ✓
Refer to Section B for checkpoints.

Timer 5th ✓

Temperature Regulator Assy. 4th ✓

Overheat Thermostats 3rd ✓

Press RESET button 2nd ✓
Allow unit to cool for 15-20 minutes before pressing RESET button.



MA672800i

Models:	M7 (-011 thru -016)	M7 (-020 thru -022)		
Serial Numbers:	all	all		

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Operation & Troubleshooting

Problem: *Biological test strips indicate items are not sterile.*

Refer To:	Page
Operation & Troubleshooting	A-1
Component Testing / Repair	B-1
Access Procedures	C-1
Wiring Diagrams	D-1
Exploded Views / Part Numbers	E-1

Type / condition of indicator strips — 1st ✓

This unit requires test strips rated for:
Gravity Displacement Steam Sterilizers

Test strips must be stored in a cool, dry location.
Failure to do so will result in faulty readings.

(Follow all instructions provided with test strips)

Is the sterlizer overloaded? — 2nd ✓

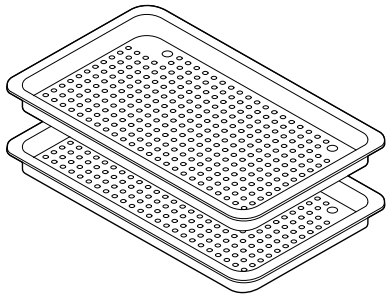
Large loads or heavy linen packs may prevent strips from changing.

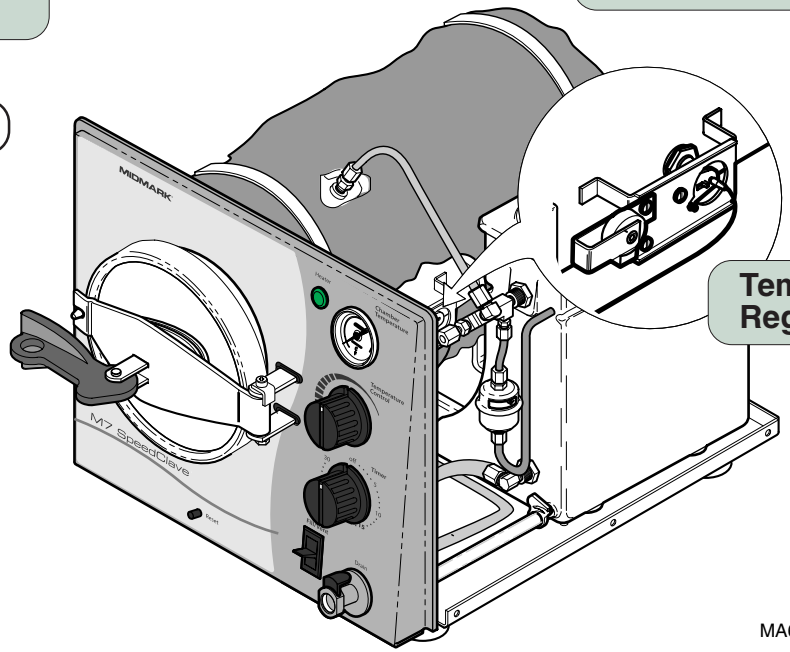
Check for pressure leaks. — 4th ✓

Refer to Section B for checkpoints.

Are the correct trays being used? — 3rd ✓

Some trays may prevent proper air flow.
Be sure trays are designed for this sterilizer.





MA672900i

Temperature Regulator Assy. — 5th ✓

Heat-Up / Sterilization

Models:	M7 (-011 thru -016)	M7 (-020 thru -022)		
Serial Numbers:	all	all		

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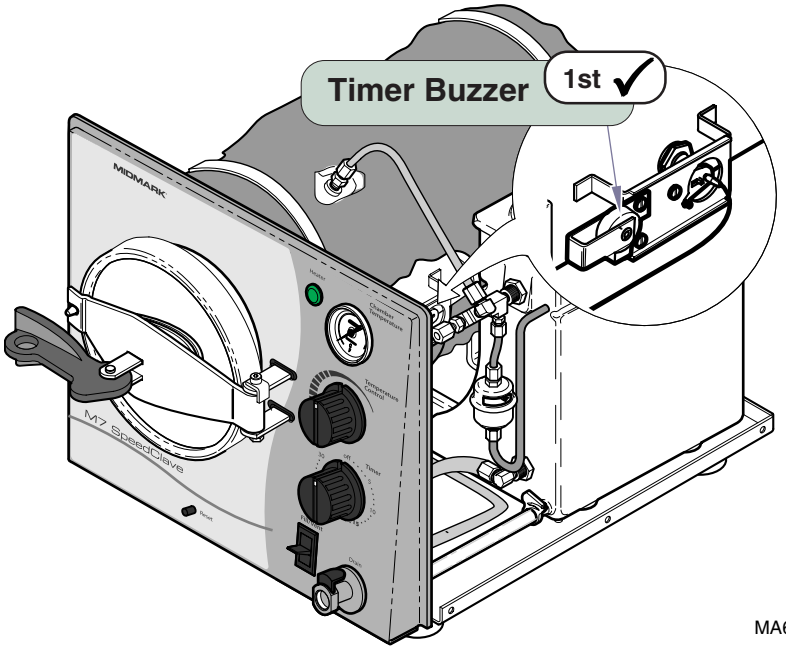
Operation & Troubleshooting

Problem: *Timer buzzer does not function.*

Refer To:	Page
Operation & Troubleshooting	A-1
Component Testing / Repair	B-1
Access Procedures	C-1
Wiring Diagrams	D-1
Exploded Views / Part Numbers	E-1



MA672900i

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Operation & Troubleshooting

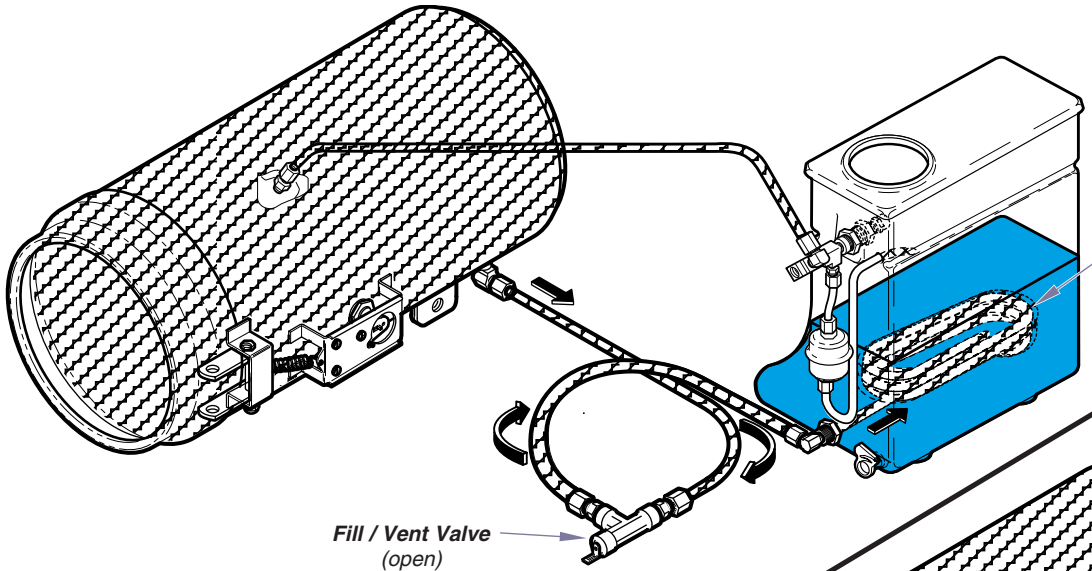
Venting the Chamber

The illustrations show the steam / water flow when venting the chamber.
Refer to the following page for a detailed description of this process.

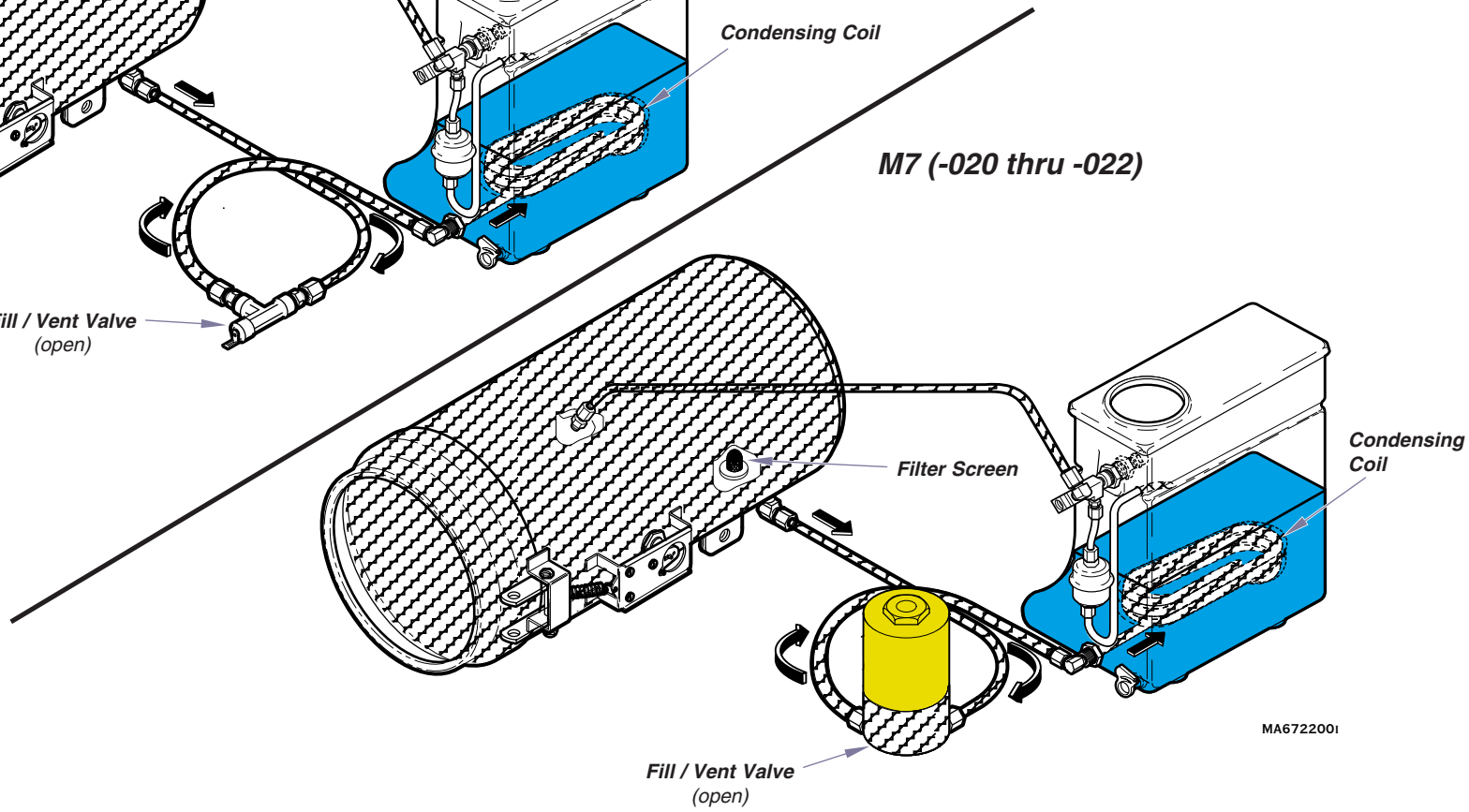
Troubleshooting
[Venting the Chamber]

Problem:	**Page**
Chamber will not vent:	
- M7 (-011 thru -016)	A-22
- M7 (-020 thru -022)	A-23

M7 (-011 thru -016)



M7 (-020 thru -022)



= Water

= Steam

Venting the Chamber

Models:	M7 (-011 thru -016)	M7 (-020 thru -022)		
Serial Numbers:	all	all		

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Venting the Chamber

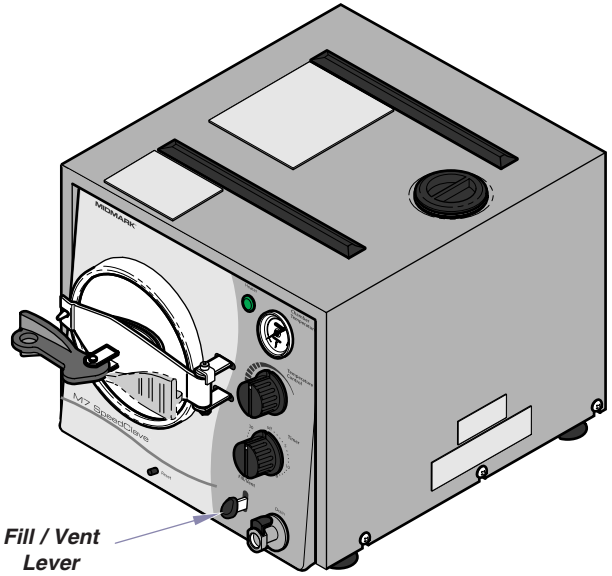
Attention
The door handle must be moved to the VENT position before pressing the Fill / Vent Lever or Switch.

M7 (-011 thru -016)

When the Fill / Vent Lever is pressed and held...
Fill / Vent Valve
The *(normally closed - manual)* valve opens. Pressure forces water and steam back into the reservoir thru the valve and the condensing coil. When all of the pressure has been vented, the door will "pop".

Note: Release the lever when the door "pops".
If the lever is held too long, the chamber will begin to fill.

When the Fill / Vent Lever is released...
Fill / Vent Valve
The valve closes.

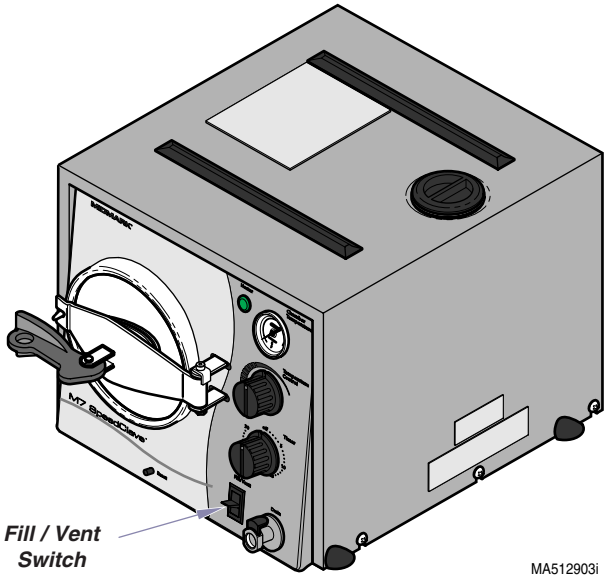


M7 (-020 thru -022)

When the Fill / Vent Switch is pressed and held...
Fill / Vent Switch & Valve
Current *(line voltage)* flows thru the fill/vent switch to the fill/vent valve. When voltage is applied, the *(normally closed)* fill / vent valve opens. Pressure forces water and steam back into the reservoir thru the valve and the condensing coil. When all of the pressure has been vented, the door will "pop".

Note: Release the lever when the door "pops".
If the lever is held too long, the chamber will begin to fill.

When the Fill / Vent Switch is released...
Fill / Vent Switch & Valve
The fill/vent switch opens, stopping the current flow to the fill/vent valve. When voltage is removed, the valve closes.



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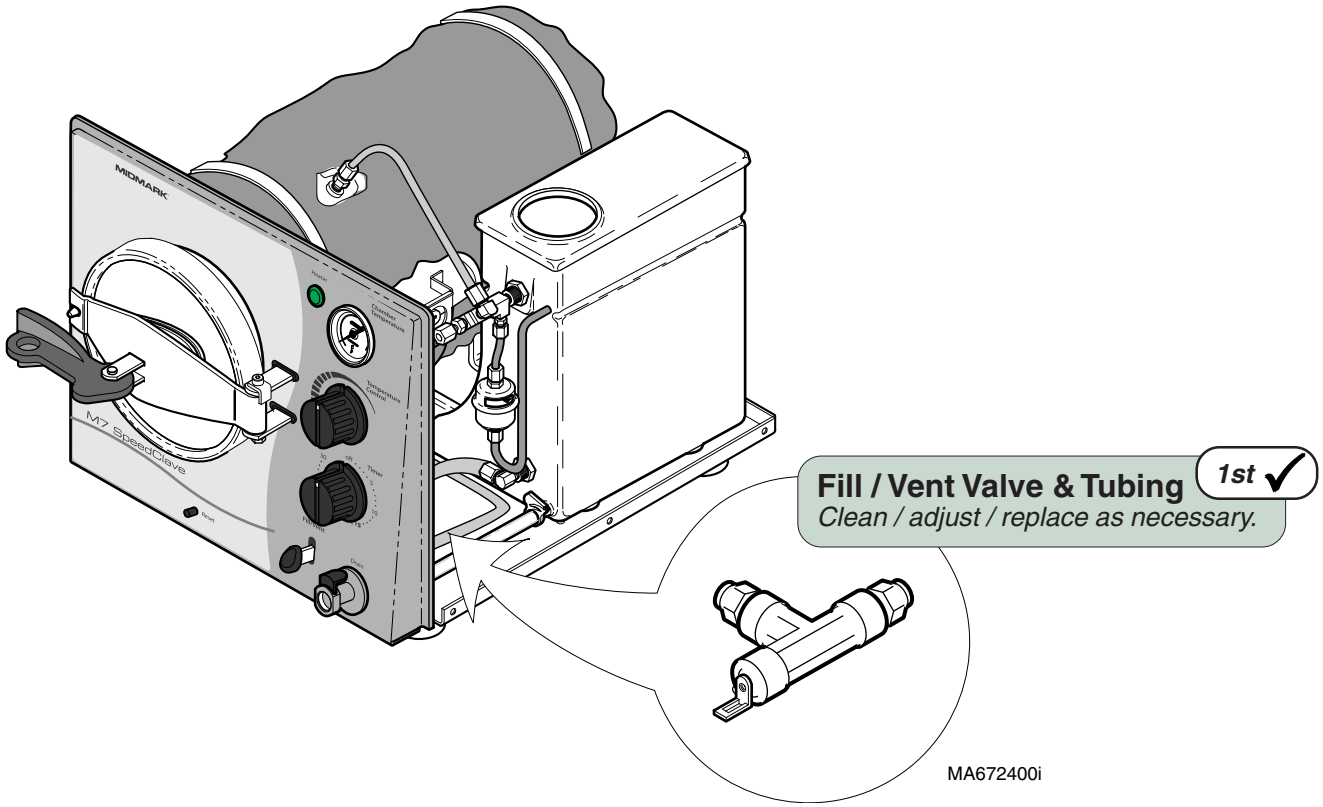
Operation & Troubleshooting

Problem: *Chamber will not vent.*

Refer To:	Page
Operation & Troubleshooting	A-1
Component Testing / Repair	B-1
Access Procedures	C-1
Wiring Diagrams	D-1
Exploded Views / Part Numbers	E-1



Venting the Chamber

Models:	M7 (-011 thru -016)			
Serial Numbers:	all			

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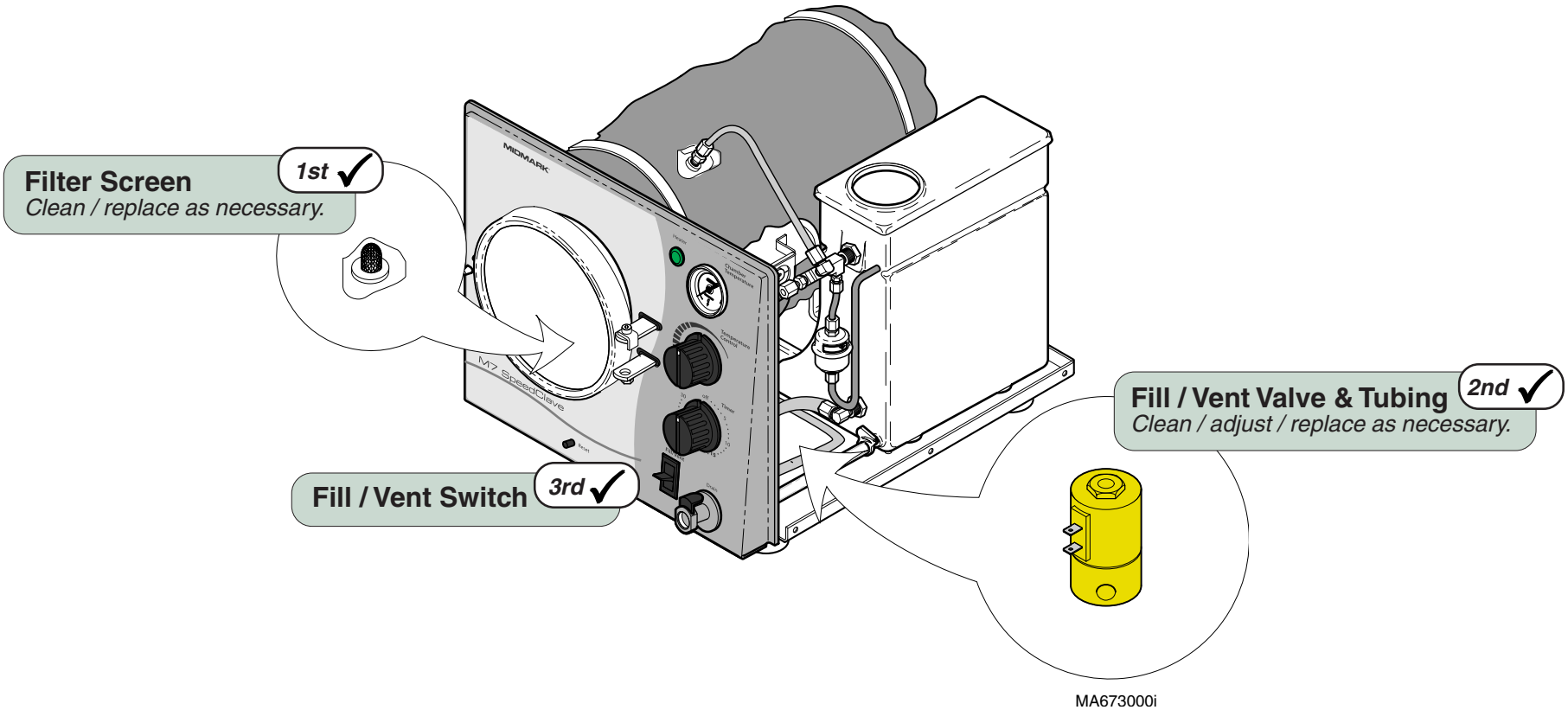
Operation & Troubleshooting

Problem: *Chamber will not vent.*

Refer To: **Page**

Operation & Troubleshooting A-1
Component Testing / Repair B-1
Access Procedures C-1
Wiring Diagrams D-1
Exploded Views / Part Numbers E-1



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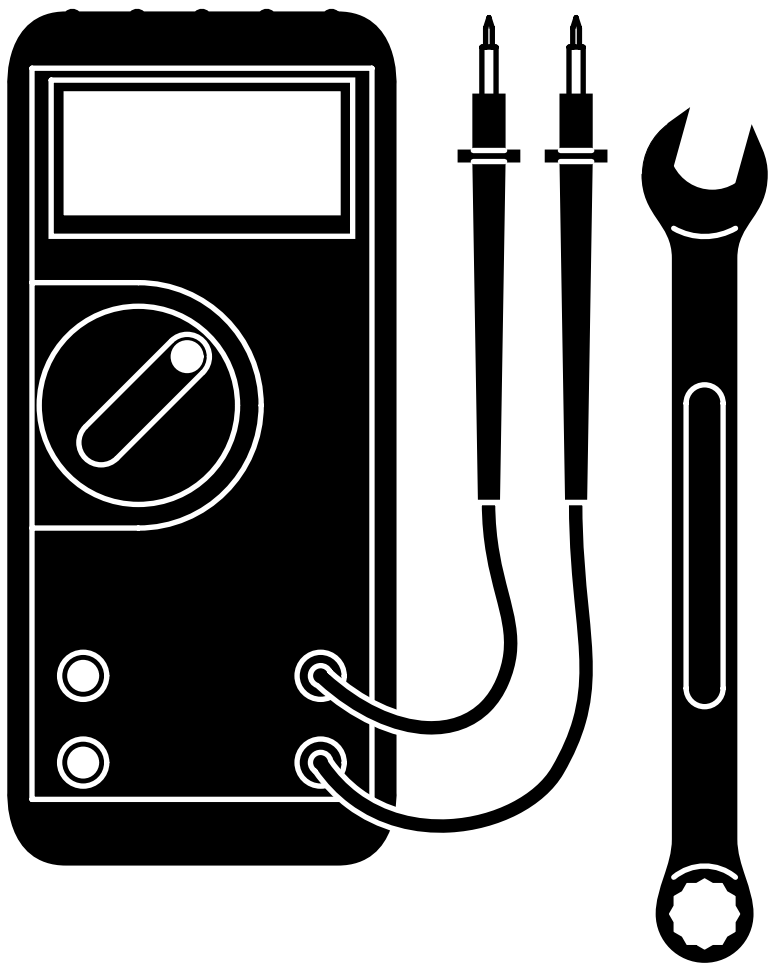
Section B

Testing & Repair



Component / Procedure	Page
Checking For Pressure Leaks	B-2
Fuse *[M7 (-020 thru -022) only]*	B-3
Bellows	B-4
Fill / Vent Valve:	
Manual	B-6
Electronic	B-8
Temperature Regulator Assy.	B-12
Heating Element	B-18
Overheat Thermostats	B-22
Pressure Relief Valve	B-25
Timer Assembly	B-26
Timer Buzzer	B-30
Temperature Gauge	B-31
Door Assembly	B-32
Reservoir Tank	B-34
Chamber Assembly	B-36

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Component Testing & Repair

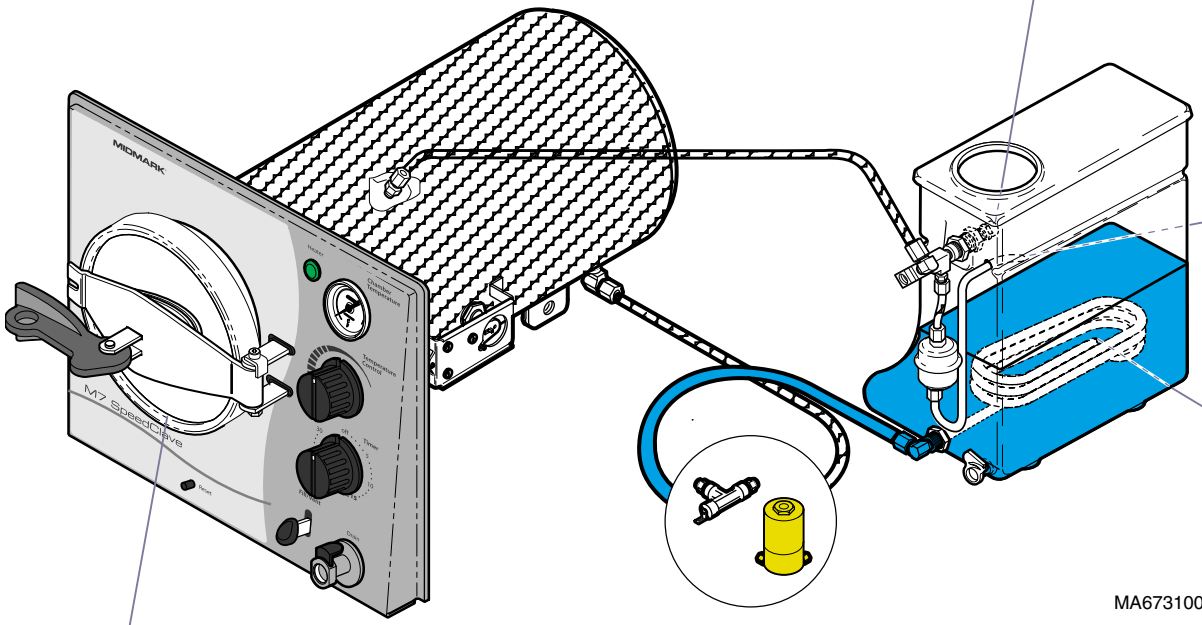
Checking for Pressure Leaks

This illustration shows the areas to check for pressure leaks.

Components	Page
Bellows	B-4
Fill / Vent Valve:	
Manual	B-6
Electronic	B-8
Pressure Relief Valve	B-25
Door Assembly	B-32

Water leaking from fitting(s)?
Tighten / replace fittings if necessary.

Steam from pressure relief valve?
If YES, replace the pressure relief valve.



Steam from bellows tubing?
If YES, replace the bellows.

Note: The bellows should close at approx. 215°F (101°C). Periodic "hissing' or "spitting" is normal.

Bubbles from condensing coil?
If YES, clean or replace the fill / vent valve.

MA673100i

Water leaking from door?
If YES, replace door gasket.

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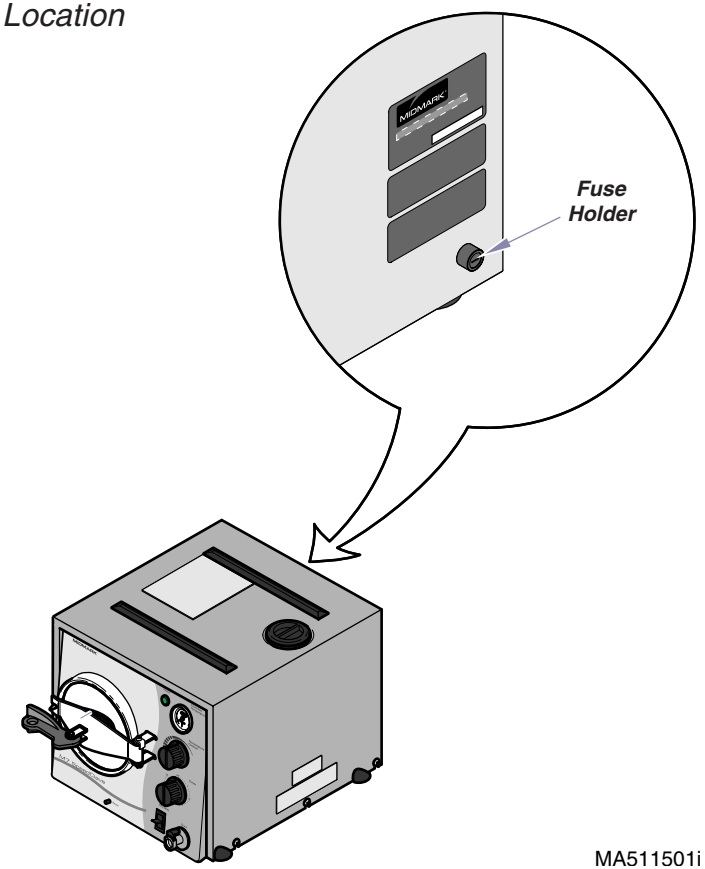
Component Testing & Repair

Fuse

Fuses	Page
Location	B-3
Fuse Test	B-3
Wiring Diagrams	D-1
Part Numbers	E-14.1

Location

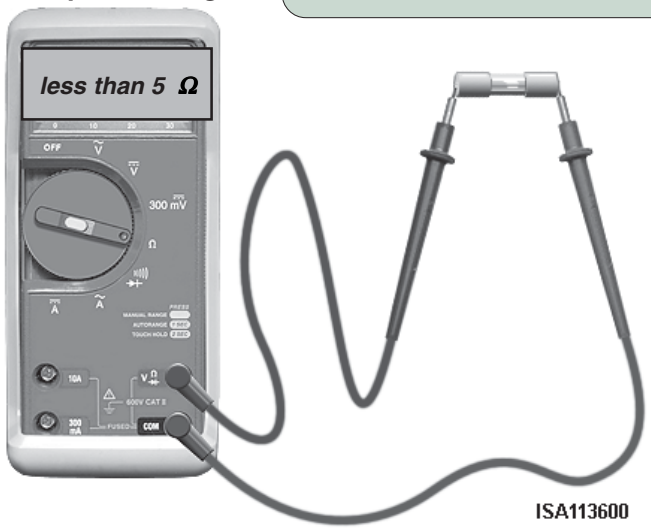


Fuse Ratings:
115V models ..... 12 amp, 250 V, Fast-Acting, 1/4" x 1-1/4"
230V models ..... 8 amp, 250 V, Fast-Acting, 5mm x 20mm

Fuse Test

Acceptable Range

Fuse Test
Step 1: Place meter probes on ends of fuse.
[Set meter to 200 ohms (Ω)]



FuseTest
If reading is OL...
Replace fuse.

If reading is within acceptable range...
Fuse is OK.

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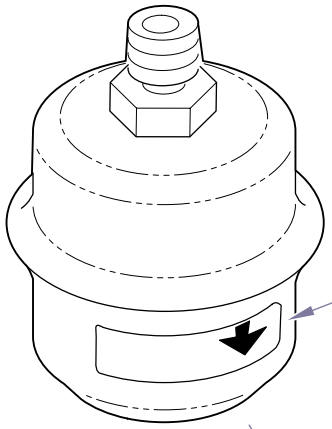
Component Testing & Repair

Bellows

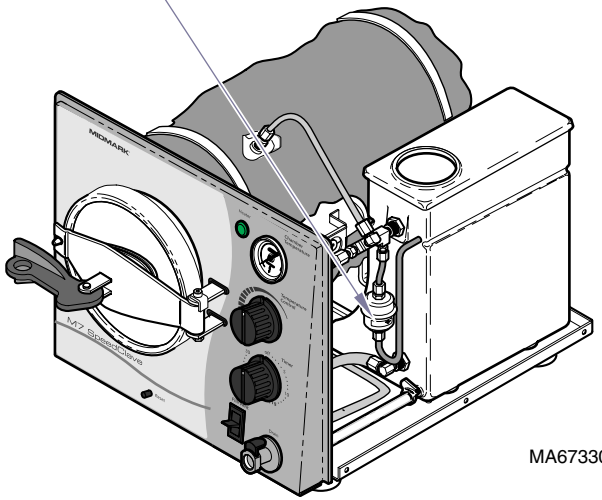
Location & Function

Bellows **Page**
Location & Function B-4
Testing - refer to:
Checking for Pressure Leaks B-2
Replacement B-5
Exploded View / Part Numbers E-11



*The arrow indicates the direction of flow **toward the reservoir**.*

The bellows must be oriented correctly to ensure proper operation.



MA673301i

As the water in the chamber begins to boil...
Air & steam are forced out of the chamber,
thru the open bellows, and back into the reservoir.

When pure steam begins flowing thru bellows...
The bellows closes allowing pressure to build in the chamber.
[Note: The bellows will periodically "hiss" or "spit", this is normal.

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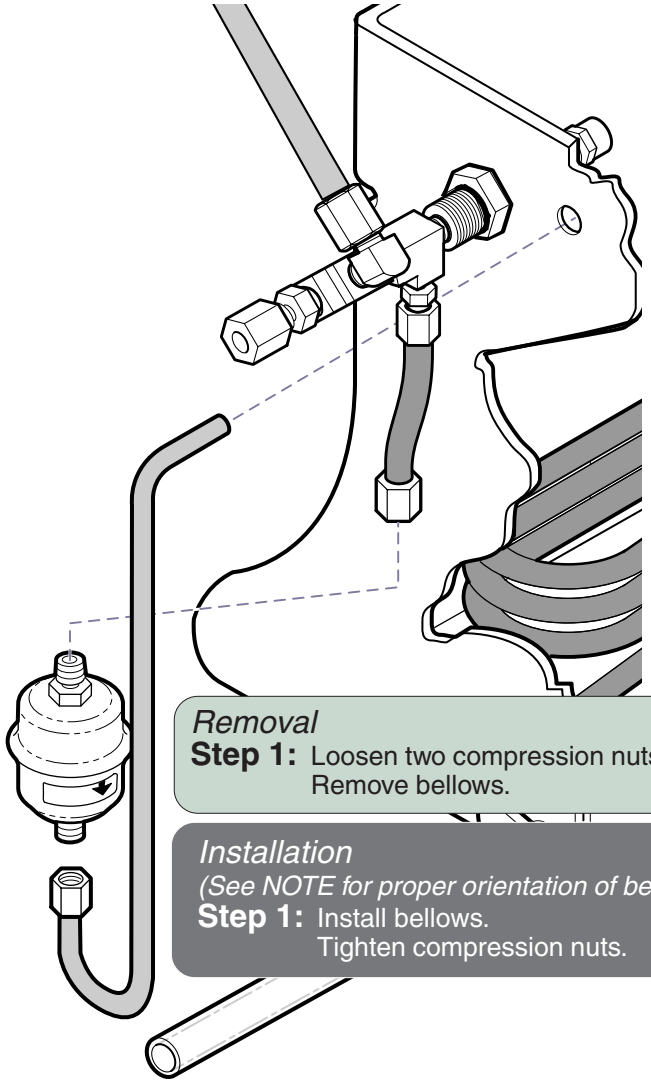
Component Testing & Repair

Bellows *- continued*

Replacement

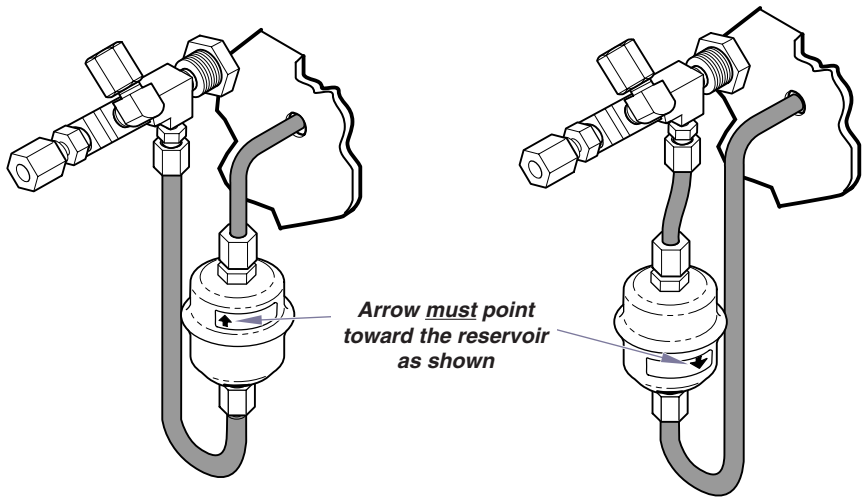
Refer to: **Page**
Cover Removal C-2



Removal
Step 1: Loosen two compression nuts.
Remove bellows.

Installation
(See NOTE for proper orientation of bellows)
Step 1: Install bellows.
Tighten compression nuts.

NOTE:
The arrow on the bellows indicates the direction of flow ***toward the reservoir****.*
The bellows must be oriented correctly to ensure proper operation.



MA673401i

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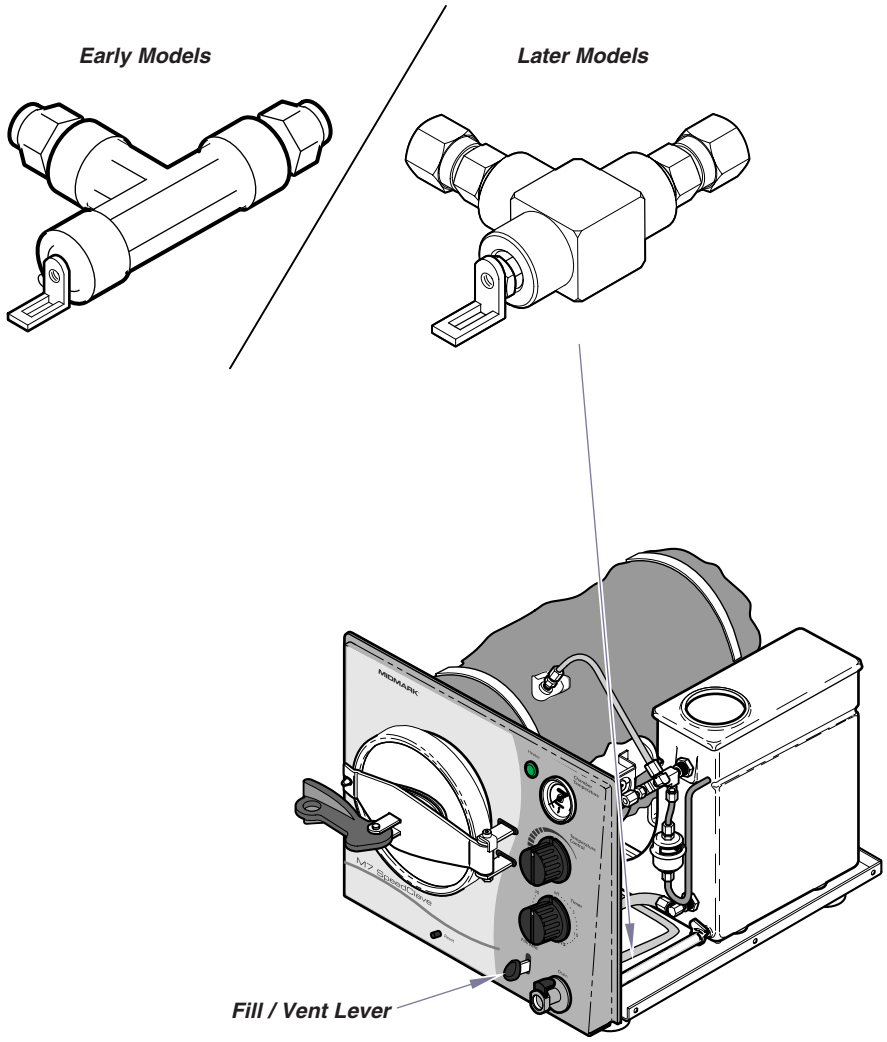
Component Testing & Repair

Fill / Vent Valve (manual)

Location & Function

Fill / Vent Valve	Page
Location & Function	B-6
Testing - refer to:	
Checking for Pressure Leaks	B-2
Removal / Installation / Adjustment	B-7
Exploded View / Part Numbers	E-9



MA673500i

When the fill / vent lever is pressed (no pressure in chamber)...
The *(normally closed)* fill / vent valve opens.
Water from the reservoir flows thru the open valve into the chamber.
The valve closes when the lever is released.

When the fill / vent lever is pressed (chamber is pressurized)...
The *(normally closed)* fill / vent valve opens.
Water and steam from the chamber are forced thru the open valve back into the reservoir. When all of the pressure has been released, the door will "pop".
The valve closes when the lever is released.

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Component Testing & Repair

Fill / Vent Valve (manual) - *continued*

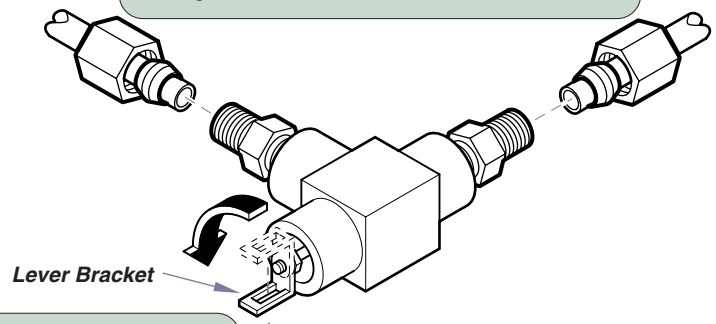
Removal / Installation / Adjustment

Refer to: **Page**
Cover Removal C-2
Draining / Filling the Reservoir C-4

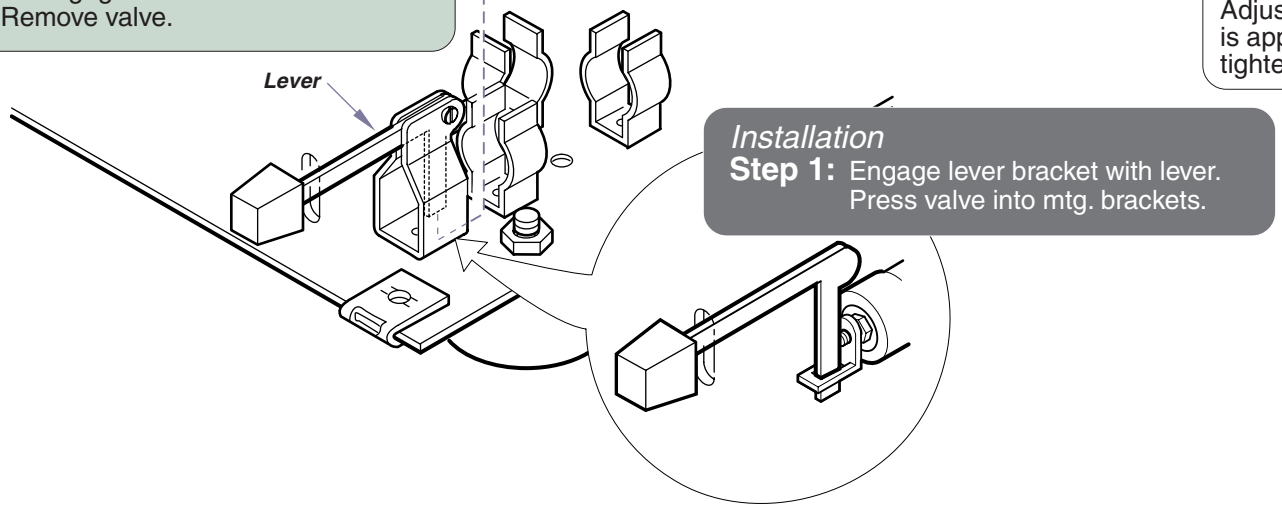
Removal
Step 1: Drain water from reservoir.

Installation
Step 2: Align tubing with valve.
Tighten two compression nuts.
Adjust lever bracket. (See *Adjustment*)

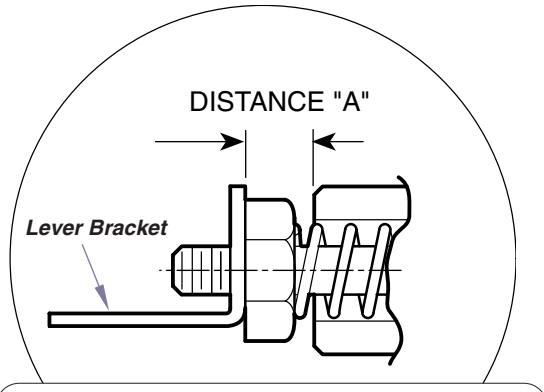
Removal
Step 2: Loosen two compression nuts.



Removal
Step 3: Disengage lever bracket from lever.
Remove valve.



Installation
Step 1: Engage lever bracket with lever.
Press valve into mtg. brackets.



Adjustment
Adjust lever bracket so that Distance "A" is approx. 1/4" (0.63 cm). To secure position, tighten nut against lever bracket.

MA673600i

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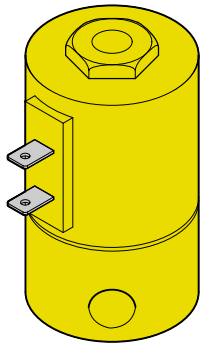
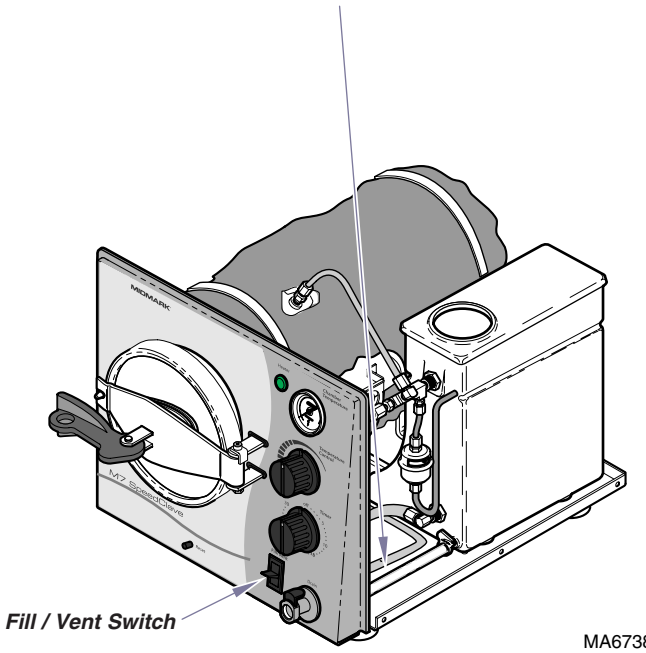
Component Testing & Repair

Fill / Vent Valve (electronic)

Location & Function





MA673800i

Fill / Vent Valve	Page
Location & Function	B-8
Testing - refer to:	
Checking for Pressure Leaks	B-2
Electrical Test	B-9
Replacement	B-10
Disassembly / Cleaning	B-11
Wiring Diagrams	D-1
Exploded View / Part Numbers	E-9.3

When the fill / vent switch is pressed (no pressure in chamber)...
Current *(line voltage)* flows thru the fill/vent switch to the fill / vent valve.
When voltage is applied, the *(normally closed)* fill/vent valve opens.
Water from the reservoir flows thru the open valve into the chamber.
The valve closes when the switch is released.

When the fill / vent lever is pressed (chamber is pressurized)...
Current *(line voltage)* flows thru the fill/vent switch to the fill/vent valve.
When voltage is applied, the *(normally closed)* fill / vent valve opens.
Water and steam from the chamber are forced thru the open valve back into the reservoir. When all of the pressure has been released, the door will "pop".
The valve closes when the lever is released.

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Component Testing & Repair

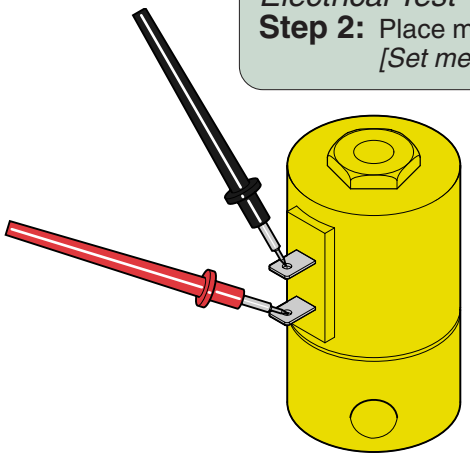
Fill / Vent Valve (electronic) - *continued*

Electrical Test

Refer to: **Page**
Cover Removal C-2

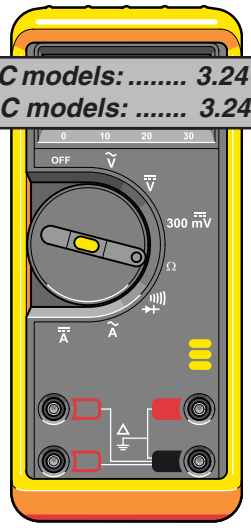
Electrical Test
Step 1: Disconnect wires from valve terminals.

Electrical Test
Step 2: Place meter probes on terminals.
[Set meter to M ohms (Ω)]



Acceptable Range

115 VAC models: ..... 3.24 to 3.96
230 VAC models: ..... 3.24 to 3.96



Electrical Test
If reading is out of acceptable range...
Replace valve.

If reading is within acceptable range...
Electrical component of valve is OK.

MA674000i

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Component Testing & Repair

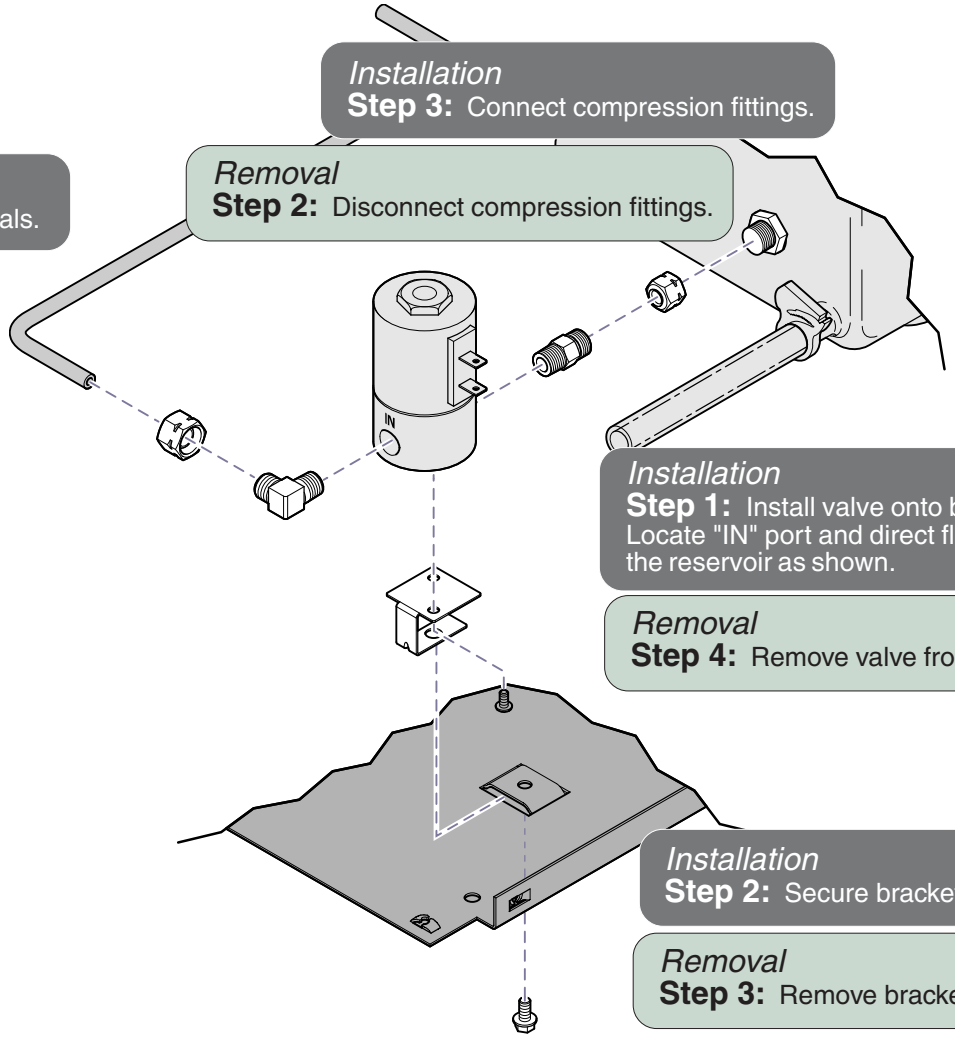
Fill / Vent Valve (electronic) - *continued*

Replacement

Refer to: **Page**
Cover Removal C-2

Removal
Step 1: Tag and disconnect wires from valve terminals.

Installation
Step 4: Connect wires to valve terminals.



Installation
Step 3: Connect compression fittings.

Removal
Step 2: Disconnect compression fittings.

Installation
Step 1: Install valve onto bracket. Locate "IN" port and direct flow into the reservoir as shown.

Removal
Step 4: Remove valve from bracket.

Installation
Step 2: Secure bracket / valve to base plate.

Removal
Step 3: Remove bracket / valve from base plate.

MA677901i

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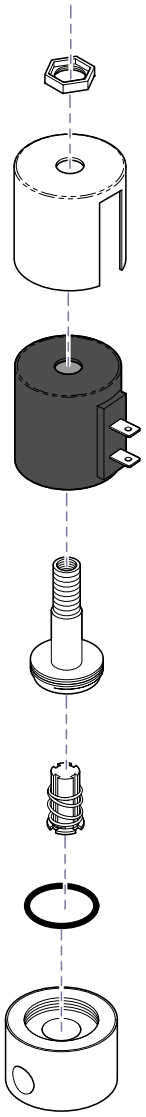
Component Testing & Repair

Fill / Vent Valve (electronic) *- continued*

Refer to: **Page**
Valve Removal B-10

Disassembly / Cleaning

Disassembly / Cleaning
Step 1: Remove nut.
Disassemble valve.



Disassembly / Cleaning
Step 2: Remove any debris.
Inspect components for damage.

MA678000i

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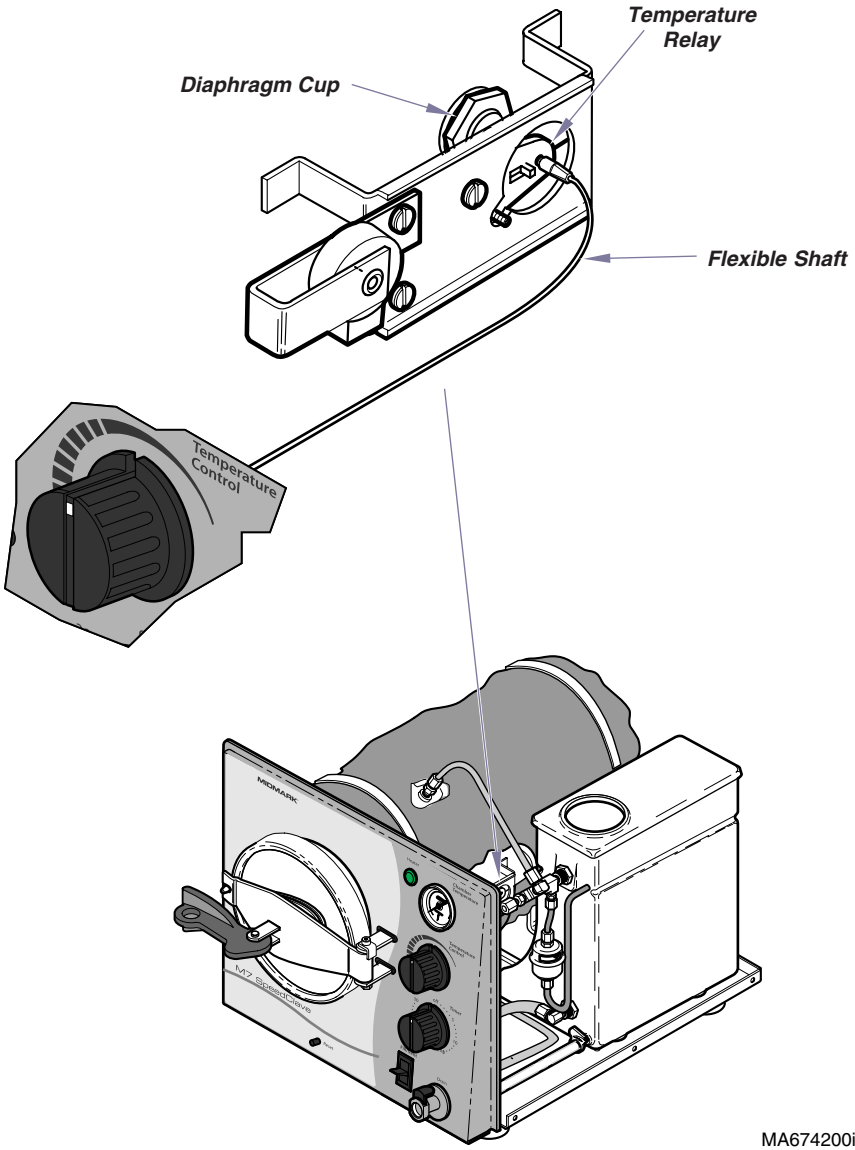
Component Testing & Repair

Temperature Regulator Assembly

Temp. Regulator Assy. **Page**

Location & Function B-12
Troubleshooting B-13
Temperature Relay:
Adjustment B-14
Removal B-15
Installation B-16
Diaphragm Cup Replacement B-17
Wiring Diagrams D-1
Exploded View / Part Numbers E-7

Location & Function



MA674200i

When the Temperature Control knob is adjusted...
The flexible shaft rotates, increasing or decreasing the distance between the relay contacts. This adjusts the point *(i.e. temperature)* at which the relay contacts will open & close*.

As the temperature & pressure inside the chamber increase...
The diaphragm cup expands, pushing the relay contacts apart.
When the relay contacts are open, the heating element is de-energized.

As the temperature & pressure inside the chamber decrease...
The diaphragm cup contracts, allowing the relay contacts to close.
When the relay contacts are closed, the heating element is energized.

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Component Testing & Repair

Temperature Regulator Assembly - *continued*

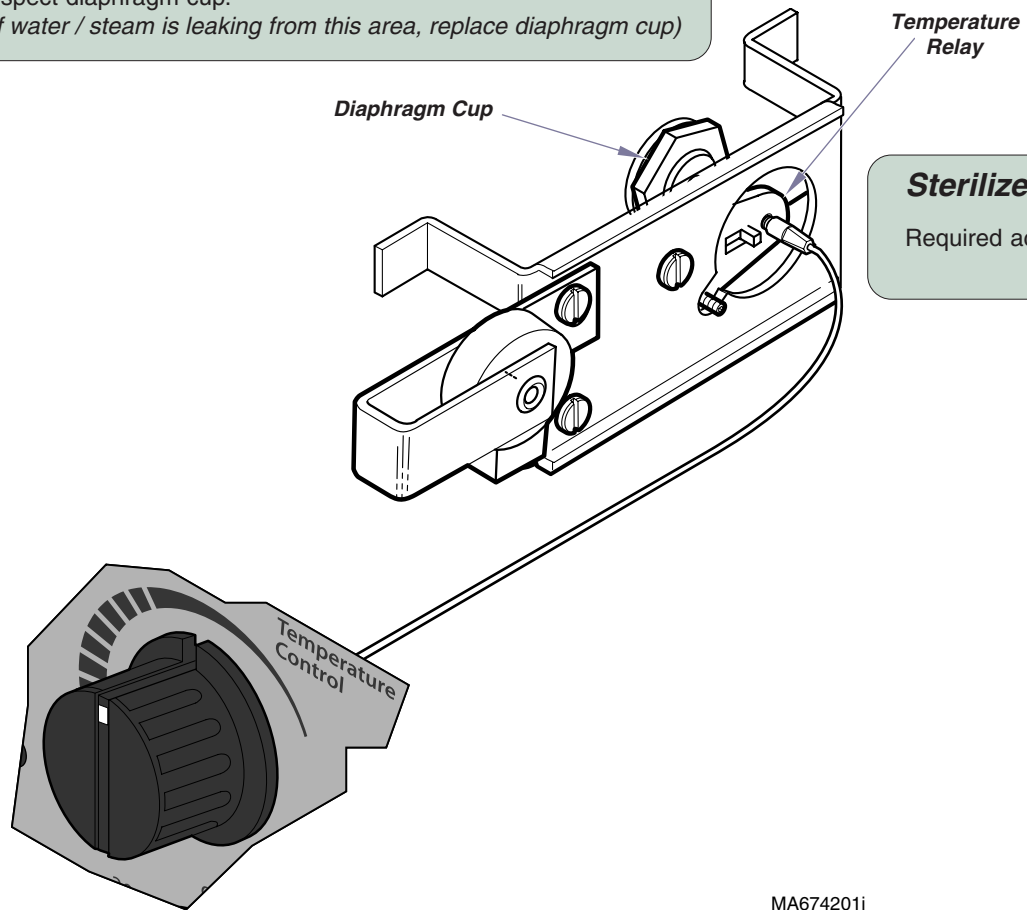
Troubleshooting

Refer to:	Page
Relay Adjustment	B-14
Relay Removal	B-15
Diaphragm Cup Replacement	B-17

Sterilizer shuts down before timer setting expires...

Required action: Inspect relay.
(If contacts are corroded or "fused" together - replace relay)

Inspect diaphragm cup.
(If water / steam is leaking from this area, replace diaphragm cup)



MA674201i

Sterilizer does not reach desired temperature...

Required action: Perform *Relay Adjustment.*
Replace relay if necessary.

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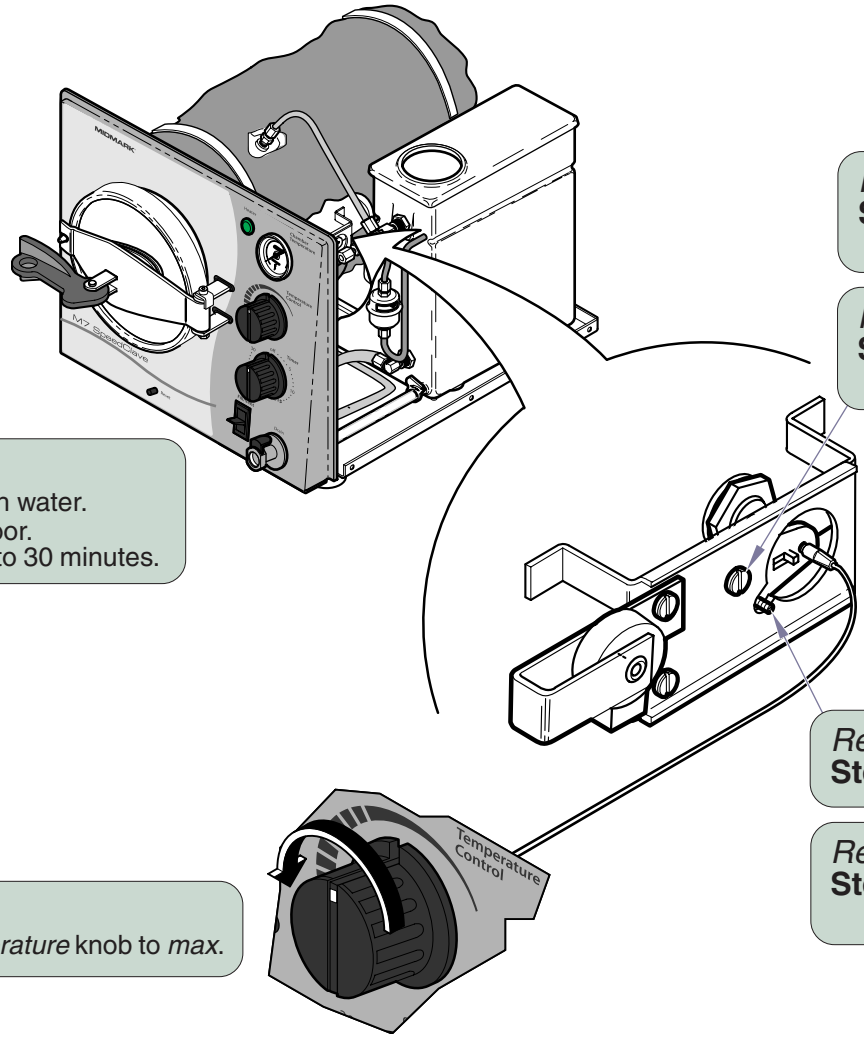
Component Testing & Repair

Temperature Regulator Assembly - *continued*

Refer to: **Page**
Cover Removal C-2

Relay Adjustment



Relay Adjustment
Step 1: Fill chamber with water.
Close & latch door.
Set *Timer* knob to 30 minutes.

Relay Adjustment
Step 2: Turn *Temperature* knob to *max.*

Relay Adjustment
Step 3: Loosen setscrew 2-3 turns.

Relay Adjustment
Step 4: Allow chamber to reach its max. temperature *[>270°F (132°C)].*

Relay Adjustment
Step 5: Adjust screw until temperature gauge reads slightly above 270°F *(132°C).*

Relay Adjustment
Step 6: Adjust setscrew until temperature gauge reads 270-271°F *(131-132°C).*

MA674400i

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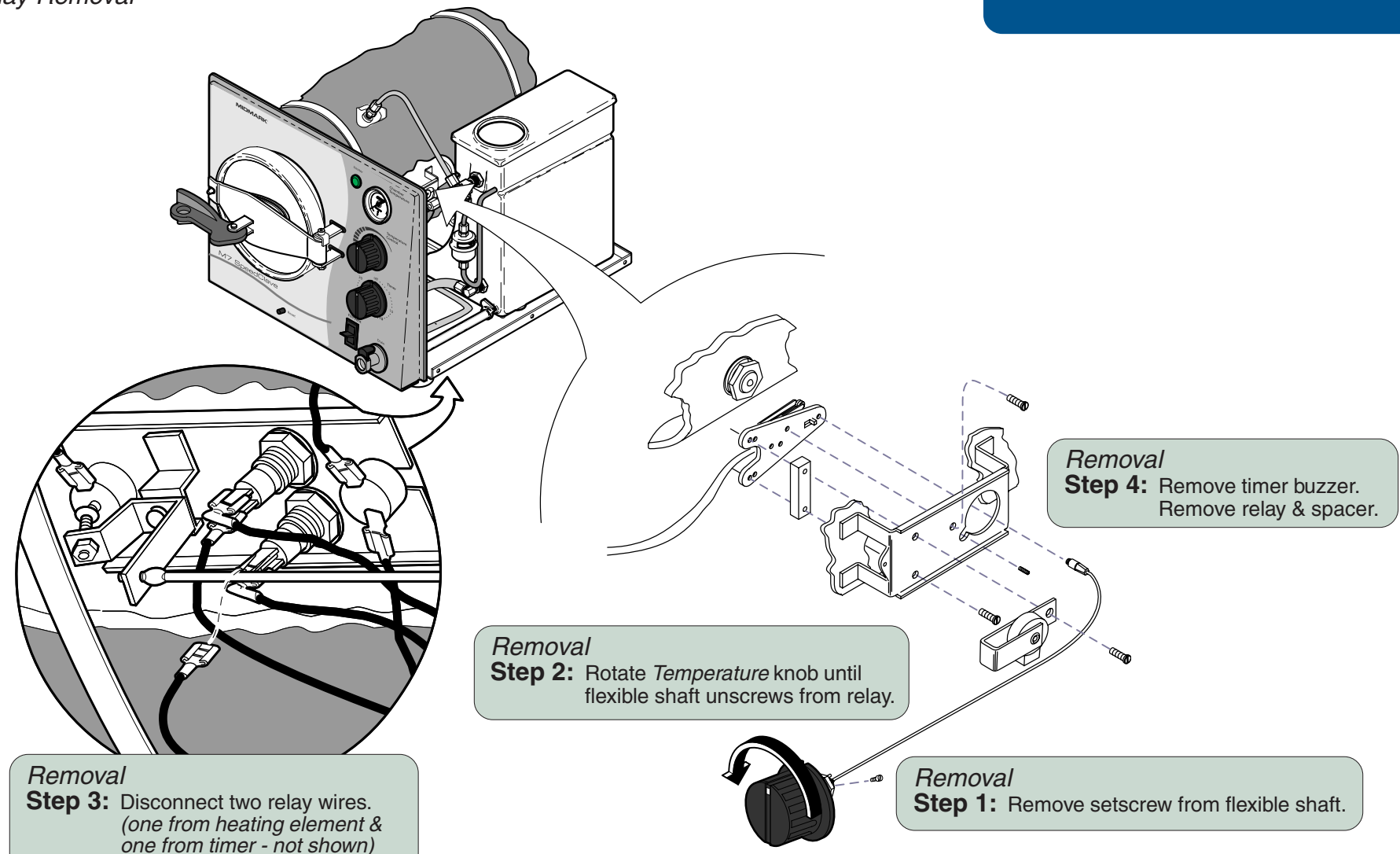
Component Testing & Repair

Temperature Regulator Assembly - *continued*

Relay Removal

Refer to: **Page**
Cover Removal C-2



Removal
Step 3: Disconnect two relay wires.
(one from heating element & one from timer - not shown)

Removal
Step 2: Rotate *Temperature* knob until flexible shaft unscrews from relay.

Removal
Step 4: Remove timer buzzer.
Remove relay & spacer.

Removal
Step 1: Remove setscrew from flexible shaft.

MA674500i

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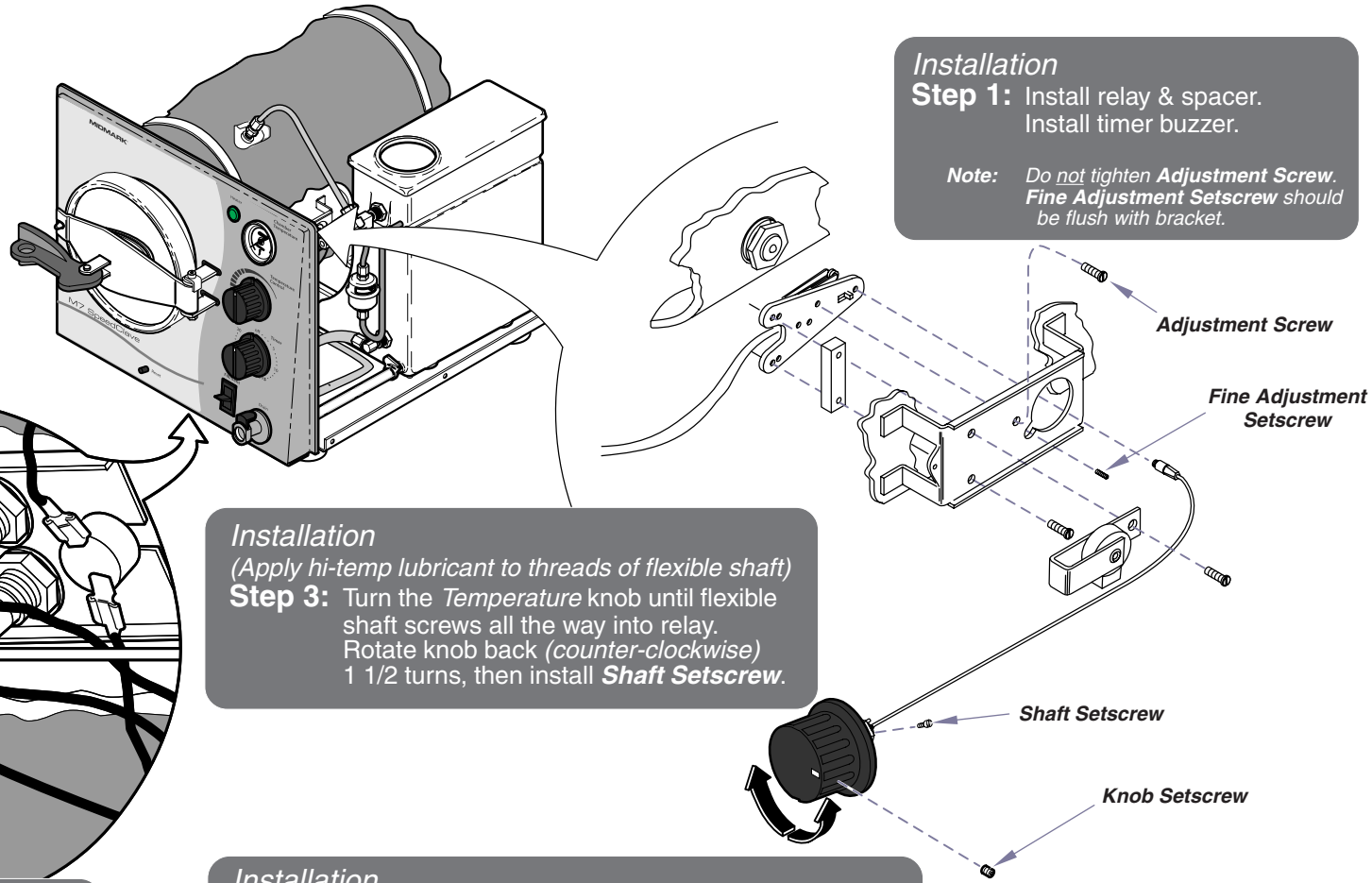
Component Testing & Repair

Temperature Regulator Assembly - *continued*

Relay Installation

Refer to:	Page
Relay Removal	B-15
Relay Adjustment	B-14



Installation
Step 1: Install relay & spacer.
Install timer buzzer.

Note: *Do not tighten **Adjustment Screw**. **Fine Adjustment Setscrew** should be flush with bracket.*

Installation
(Apply hi-temp lubricant to threads of flexible shaft)
Step 3: Turn the *Temperature* knob until flexible shaft screws all the way into relay. Rotate knob back *(counter-clockwise)* 1 1/2 turns, then install ***Shaft Setscrew***.

Installation
Step 2: Connect two relay wires. *(one to heating element & one to timer - not shown)*

Installation
Step 4: Turn the *Temperature* knob *counter-clockwise* until it hits the stop. Hold knob in place, then loosen ***Knob Setscrew***. Rotate knob so that white mark is at 3:00 position, then tighten knob setscrew.

Installation
Step 5: Perform *Relay Adjustment.*

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Component Testing & Repair

Temperature Regulator Assembly *- continued*

Diaphragm Cup Replacement

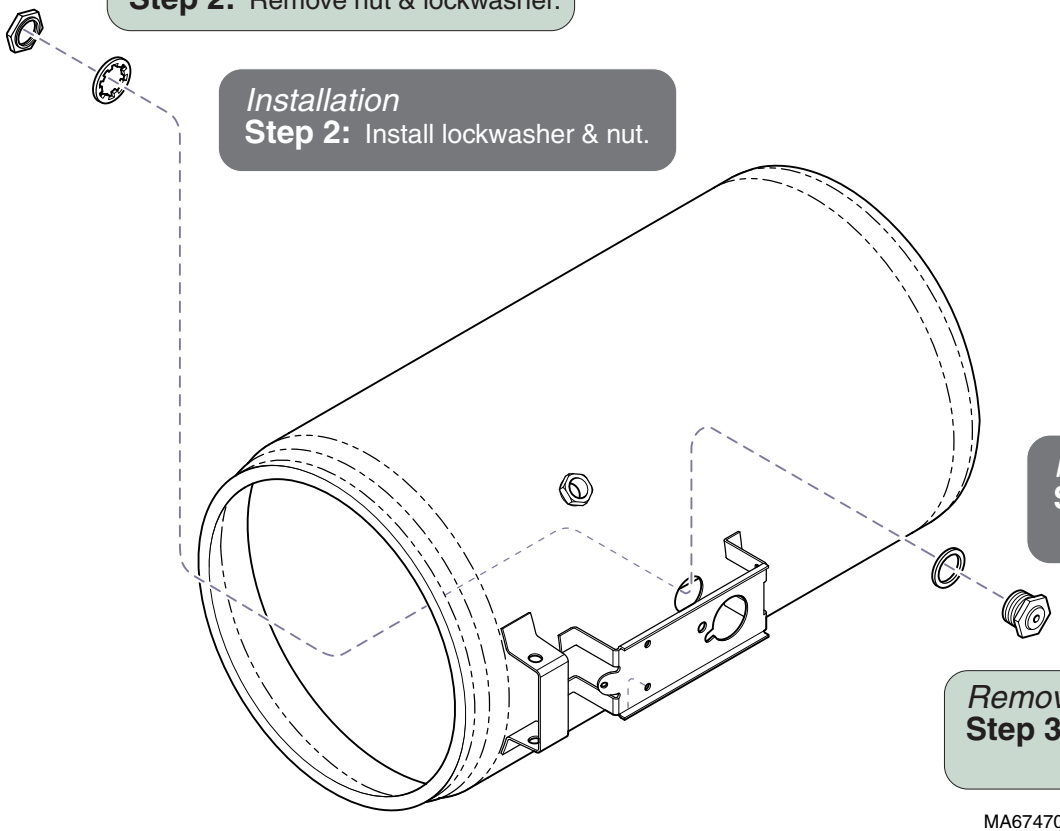
Refer to:	Page
Relay Removal	B-15
Relay Installation	B-16

Removal
Step 1: Remove relay.

Installation
Step 3: Install relay.

Removal
Step 2: Remove nut & lockwasher.

Installation
Step 2: Install lockwasher & nut.



Installation
Step 1: Install gasket onto diaphragm cup.
Install diaphragm cup.

Removal
Step 3: Remove diaphragm cup
Remove gasket from diaphragm cup.

MA674700i

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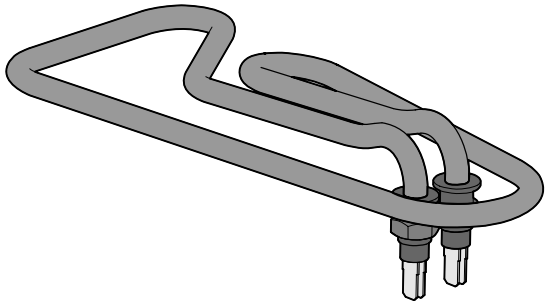
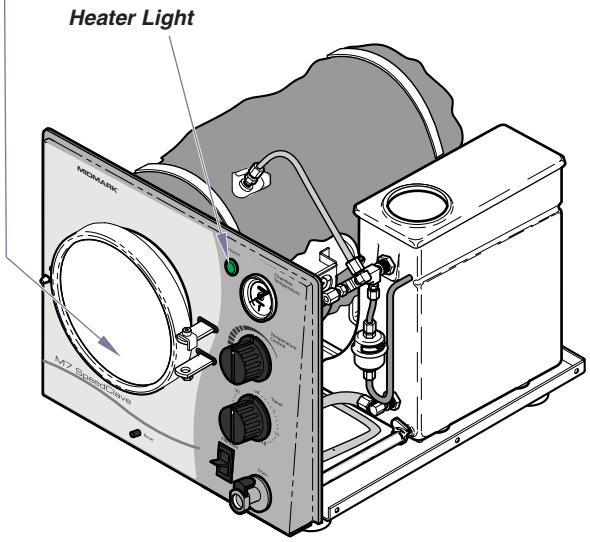
Component Testing & Repair

Heating Element

Location & Function





MA674800i

Heating Element	Page
Location & Function	B-18
Resistance Test	B-19
Replacement	B-20
Wiring Diagrams	D-1
Exploded View / Part Numbers	E-13

When the timer is turned ON...

The timer supplies current to the temperature relay. If the chamber temperature is lower than the temperature knob setting*, the relay contacts are closed. When these contacts are closed, current flows thru the relay to energize the heating element and the heater light.

When the chamber temperature reaches the temperature knob setting, the relay contacts open, and voltage is removed from the heating element & heater light.

[The minimum temperature knob setting is approx. 220°F (104°C)]*

When the timer is OFF...

Timer contacts to the temperature relay open, stopping the current flow to the heater light & heating element.

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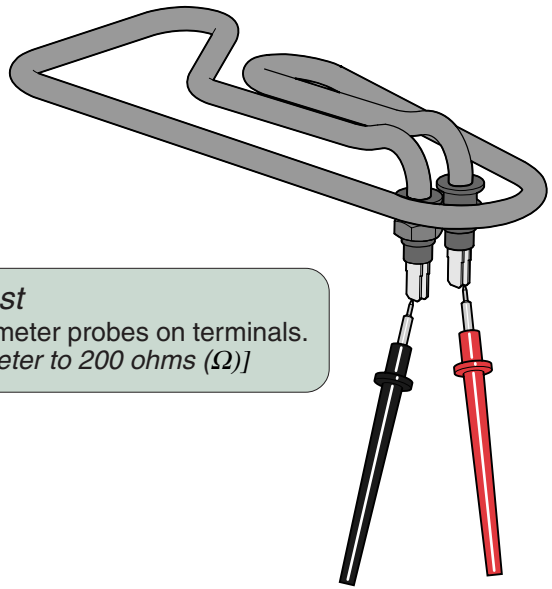
Component Testing & Repair

Heating Element - *continued*

Resistance Test

Refer to: **Page**
Cover Removal C-2

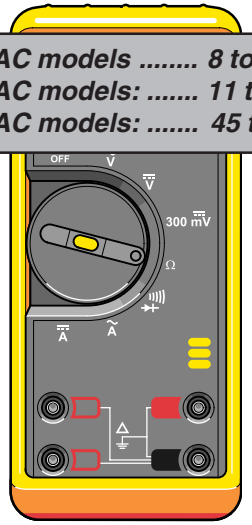
Resistance Test
Step 1: Disconnect wires from heating element terminals.



Resistance Test
Step 2: Place meter probes on terminals.
[Set meter to 200 ohms (Ω)]

Acceptable Range

100 VAC models ..... 8 to 10
115 VAC models: ..... 11 to 13
230 VAC models: ..... 45 to 51



MA674900i

Resistance Test
If reading is out of acceptable range...
Replace heating element.

If reading is within acceptable range...
Heating element is OK.

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Component Testing & Repair

Heating Element - *continued*

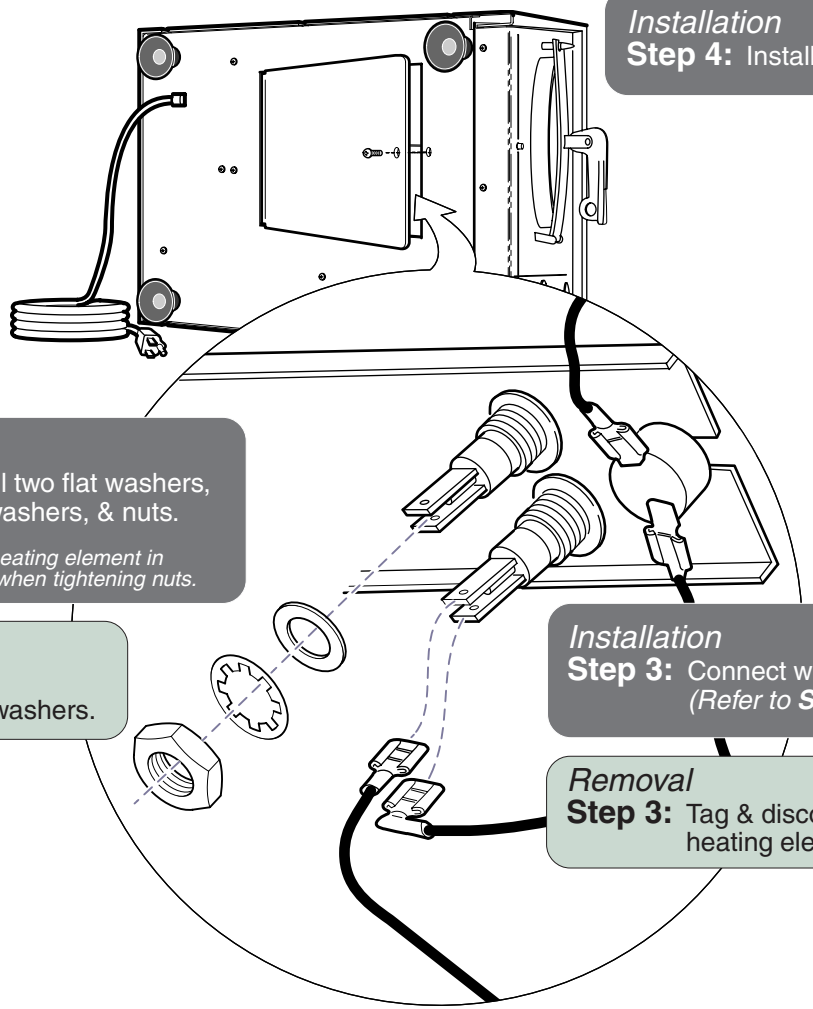
Replacement

Refer to: **Page**
Cover Removal C-2
Wiring Diagrams D-1

Removal
Step 1: Disconnect power to sterilizer. Drain all water from reservoir.

Removal
Step 2: Remove inspection cover.

Installation
Step 4: Install inspection cover.



Installation
Step 2: Install two flat washers, lockwashers, & nuts.

Note: *Hold heating element in place when tightening nuts.*

Removal
Step 4: Remove two nuts , lockwashers & flat washers.

Installation
Step 3: Connect wires to heating element terminals. *(Refer to **Section D** for wiring diagrams)*

Removal
Step 3: Tag & disconnect wires from heating element terminals.

MA675000i

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Component Testing & Repair

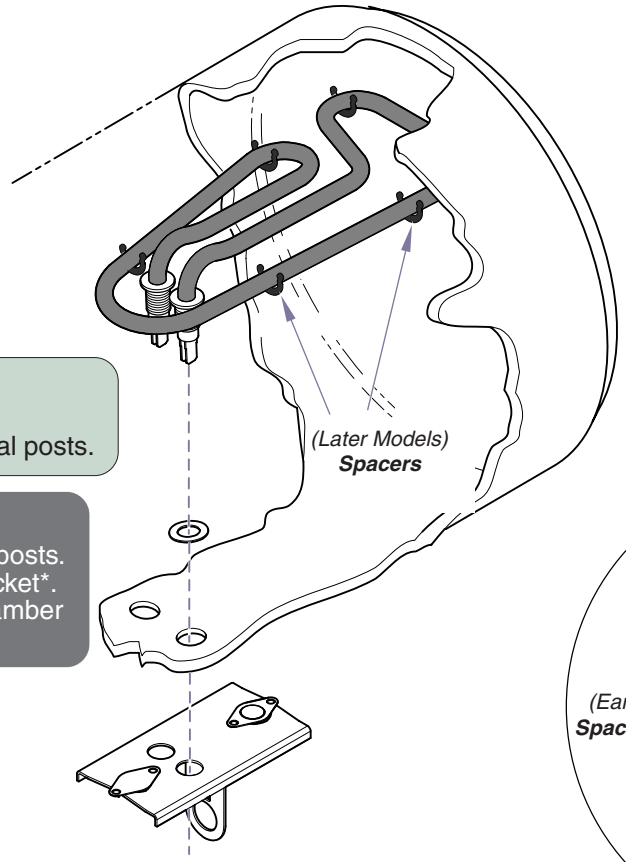
Heating Element - *continued*

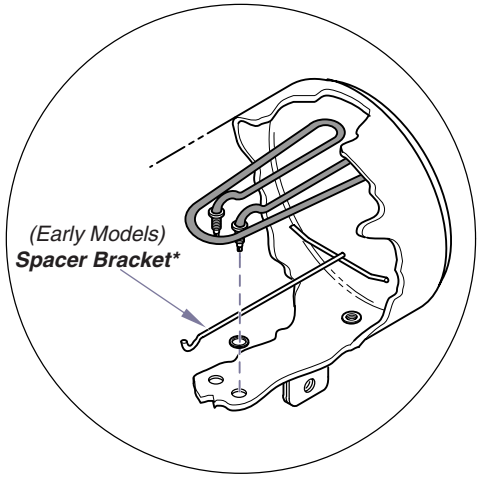
Replacement - continued

Refer to: **Page**
Cover Removal C-2

Removal
Step 5: Remove heating element.
Remove gaskets from terminal posts.

Installation
Step 1: Install gaskets onto terminal posts.
Install spacers or spacer bracket*.
Insert terminal posts thru chamber & thermostat bracket.





***** Spacer Bracket must be installed above gaskets to prevent leaking.***

MA675200i

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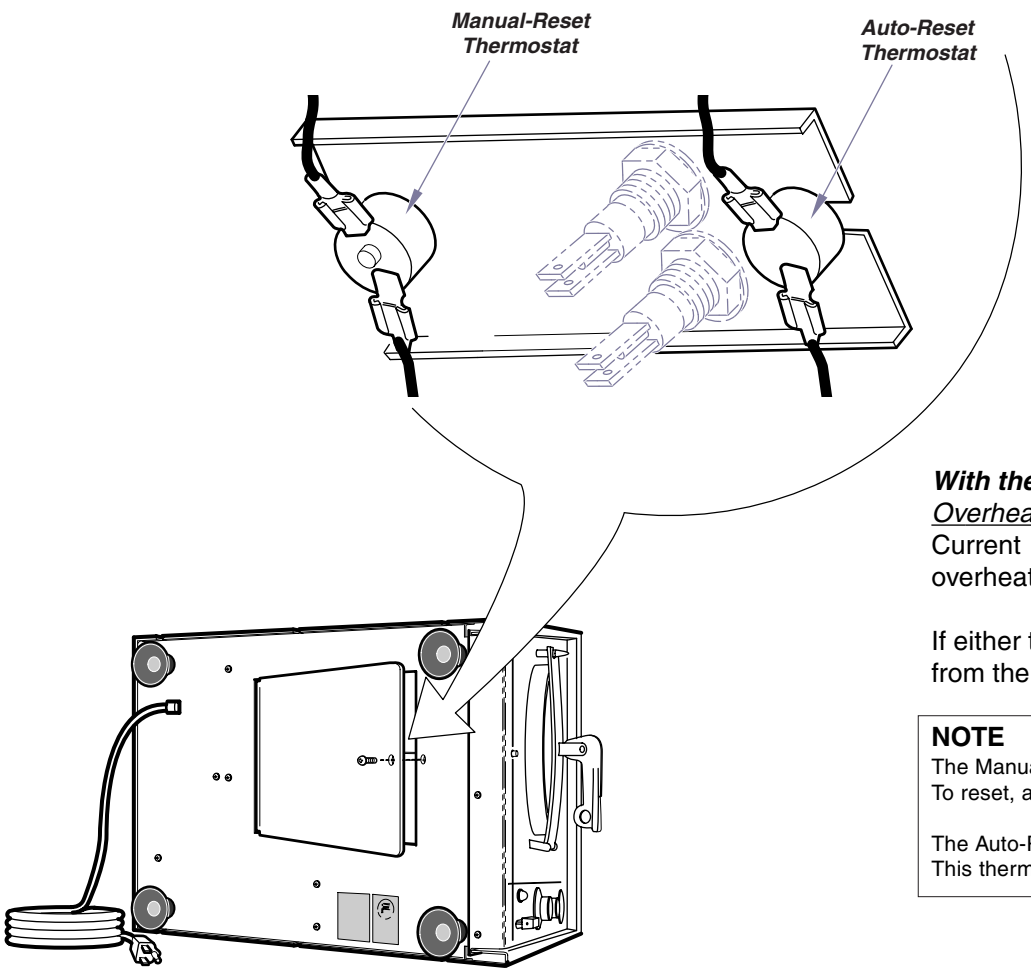
Component Testing & Repair

Overheat Thermostats

Location & Function

Overheat Thermostats	Page
Location & Function	B-22
Resistance Test	B-23
Replacement	B-24
Wiring Diagrams	D-1
Exploded View / Part Numbers	E-13



MA675300i

With the power cord properly connected...

Overheat Thermostats

Current *(115 / 230 VAC)* continuously flows thru the two *(normally closed)* overheat thermostats. This current supplies power to the timer.

If either thermostat opens *(overheat or malfunction),* voltage is removed from the timer until the thermostat is reset or replaced.

NOTE

The Manual-Reset Thermostat contacts open at approximately 285°F (140°C). To reset, allow unit to cool, then press RESET button on front of unit.

The Auto-Reset Thermostat contacts open at approximately 295°F (146°C). This thermostat automatically resets when the unit cools to approx. 265°F (129°C).

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Component Testing & Repair

Overheat Thermostats - *continued*

Resistance Test

Refer to: **Page**
Cover Removal C-2

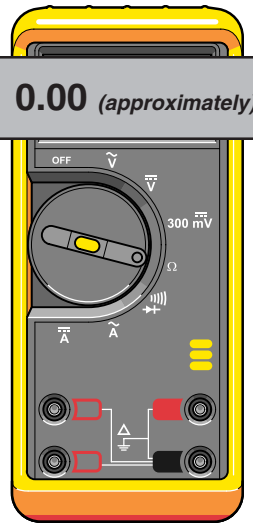
Attention!
Inspect thermostat for physical damage *(ex. cracked plastic).*
If damage is apparent, replace thermostat

Resistance Test
Step 1: Disconnect wires from thermostat terminals.

Resistance Test
Step 2: Place meter probes on terminals.
[Set meter to 200 ohms (Ω)]

Acceptable Reading

0.00 ***(approximately)***



M6875400p

ResistanceTest
If reading is (approximately) 0.00 ...
Thermostat is good.

If reading is OL...
Replace thermostat.

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Component Testing & Repair

Overheat Thermostats - *continued*

Replacement

Refer to: **Page**
Wiring Diagrams D-1

Removal
Step 1: Disconnect power to sterilizer. Drain all water from reservoir.

Installation
Step 1: Install thermostat.

Removal
Step 4: Disconnect wires. Remove thermostat.

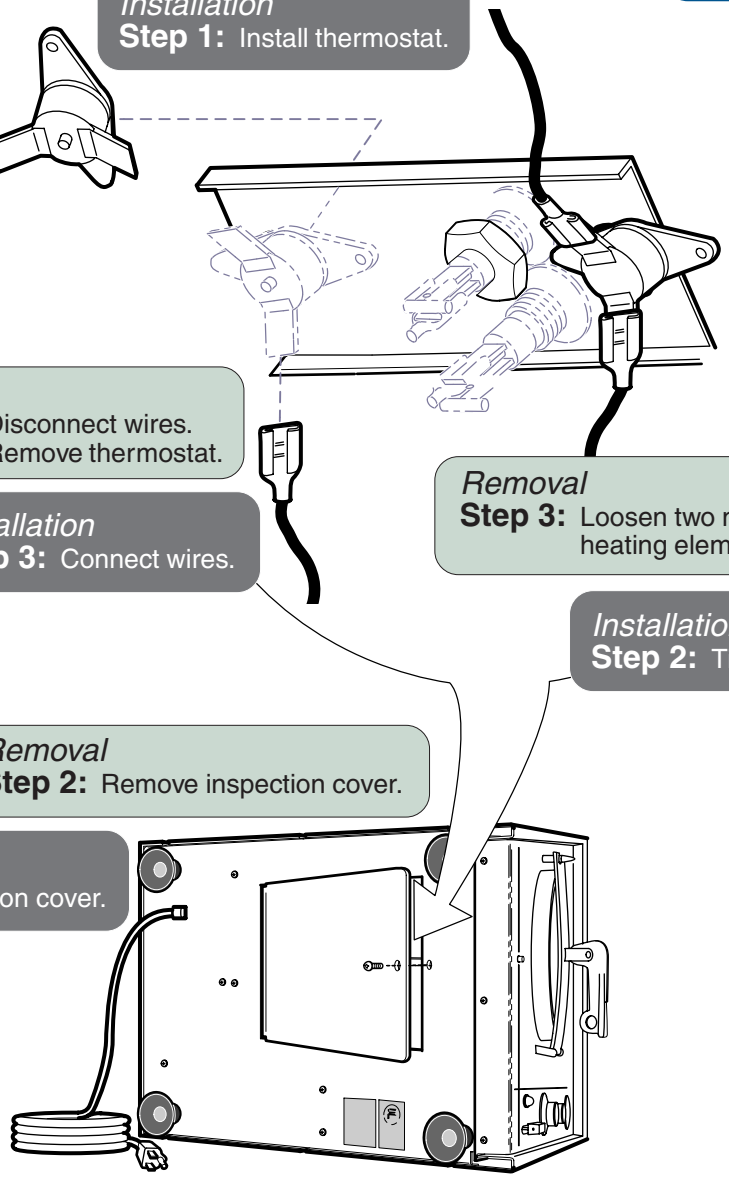
Installation
Step 3: Connect wires.

Removal
Step 3: Loosen two nuts on heating element posts.

Installation
Step 2: Tighten two nuts.

Removal
Step 2: Remove inspection cover.

Installation
Step 4: Install inspection cover.



MA675500i

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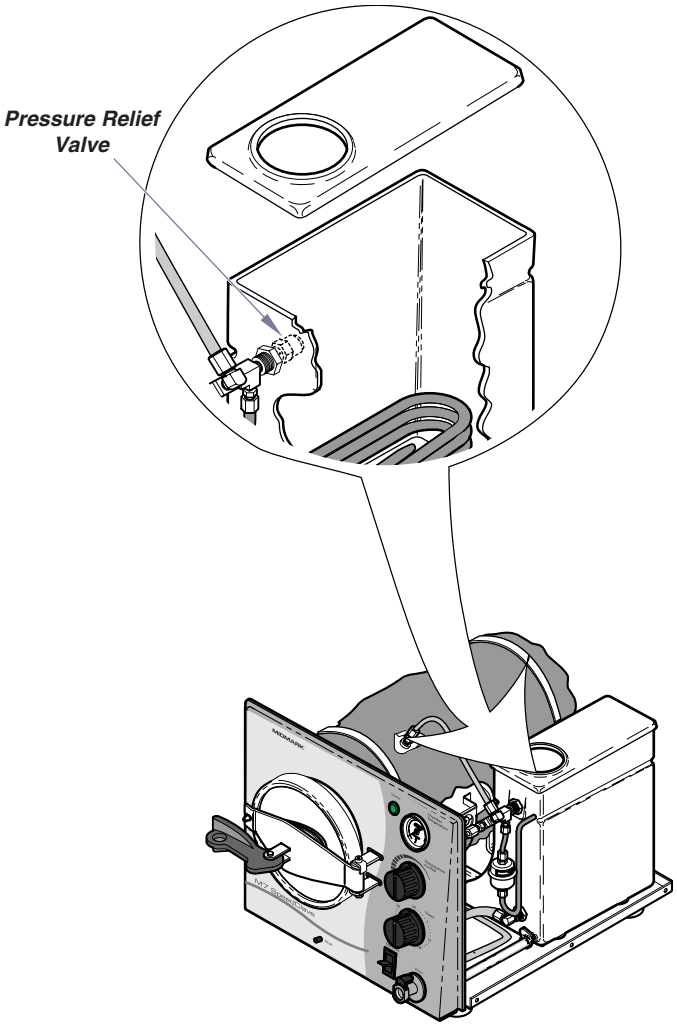
Component Testing & Repair

Pressure Relief Valve

Pressure Relief Valve	Page
Location & Function	B-25
Testing - refer to:	
Checking for Pressure Leaks	B-2
Replacement	B-25
Exploded View / Part Numbers	E-8

Location & Function

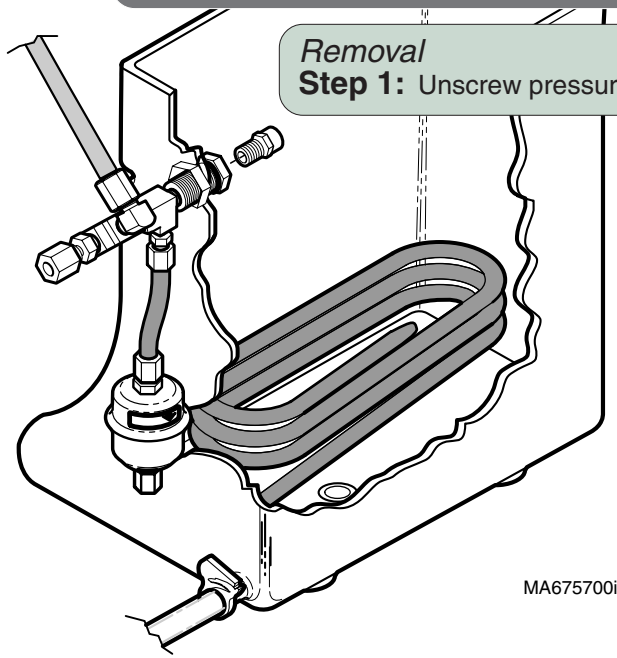
If the pressure in the chamber exceeds 34 psi (234kPa)...
The pressure relief valve opens to prevent unsafe conditions.



Replacement

Installation
Step 1: Apply hi-temp sealant to valve threads. Install valve.

Removal
Step 1: Unscrew pressure relief valve.



MA675700i

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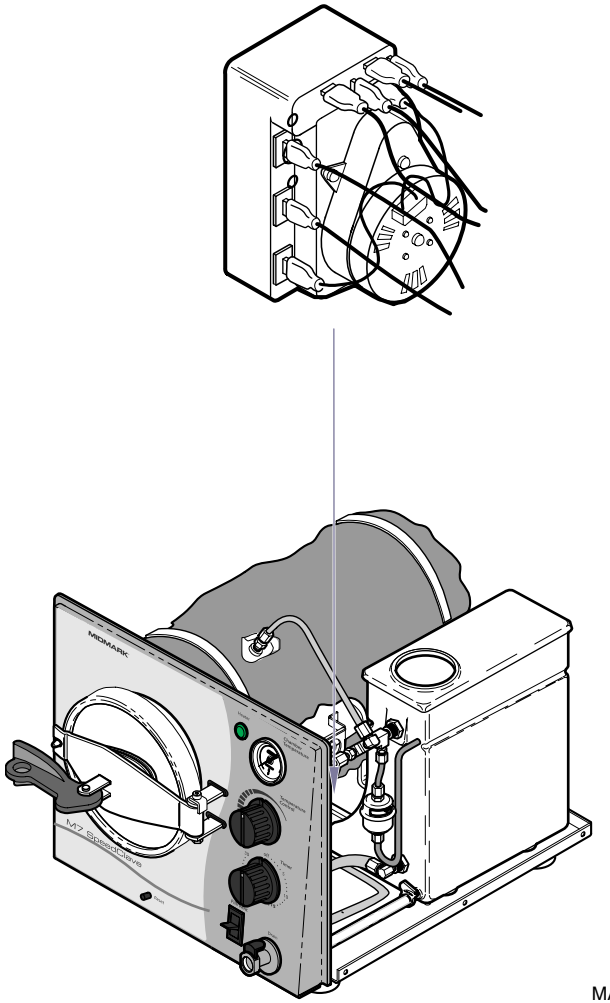
Component Testing & Repair

Timer

Location & Function

Timer	Page
Location & Function	B-26
Supply Voltage Test	B-27
Output Voltage Test	B-28
Replacement	B-29
Wiring Diagrams	D-1
Exploded View / Part Numbers	E-12



MA675800i

NOTE
Current is supplied to the timer thru the two overheat thermostats.

When the timer is turned ON...
The timer contacts to the timer motor & the temperature relay close, and voltage is supplied to these components. When voltage is applied to the timer motor, the time setting counts down.
(The contacts to the timer buzzer remain open).

When the timer setting expires...
The timer contacts to the temperature relay open, stopping the current flow to the relay.

The timer contacts to the buzzer close for one minute. Current flows to the buzzer, resulting in a audible signal. After one minute, the contacts to the timer motor & the buzzer open, stopping the current flow to these two components.

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Component Testing & Repair

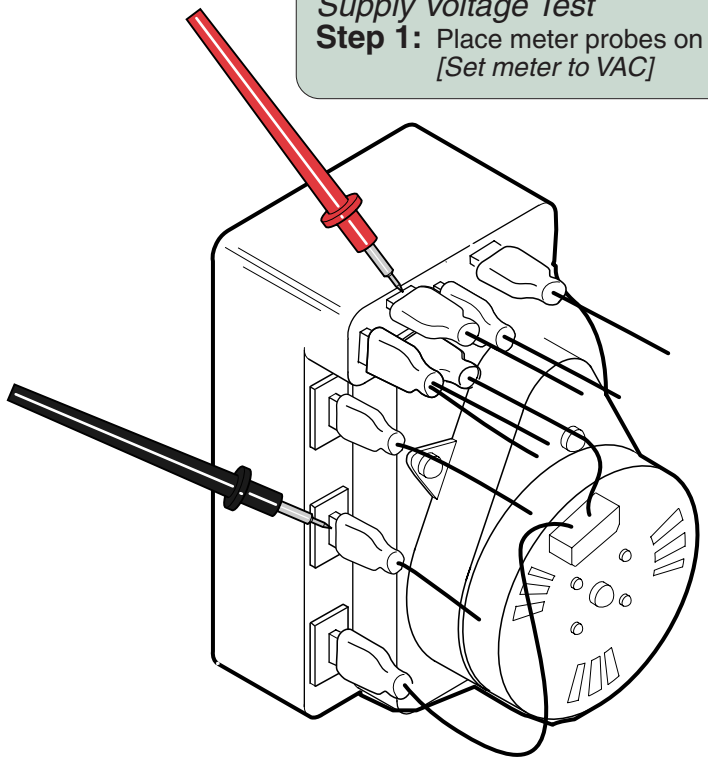
Timer - *continued*

Supply Voltage Test

Caution
This test must be performed with the power cord connected.

Refer to:	Page
Cover Removal	C-2
Output Voltage Test	B-28

Supply Voltage Test
Step 1: Place meter probes on terminals as shown.
[Set meter to VAC]



Acceptable Range

line voltage ***(115 / 230 VAC ±10%)***

MA676000i

Supply VoltageTest
If reading is within range...
Perform *Output Voltage Test.*

If reading is out of range...
Check voltage supply.
(overheat thermostats, fuse, etc.)

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Component Testing & Repair

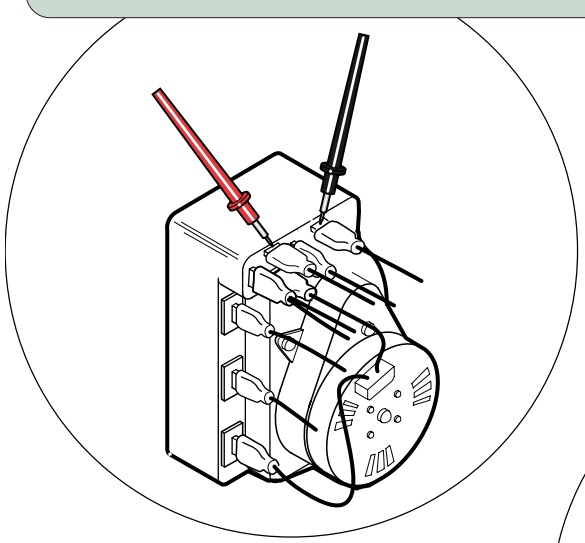
Timer - *continued*

Output Voltage Test *(perform Supply Voltage Test first)*

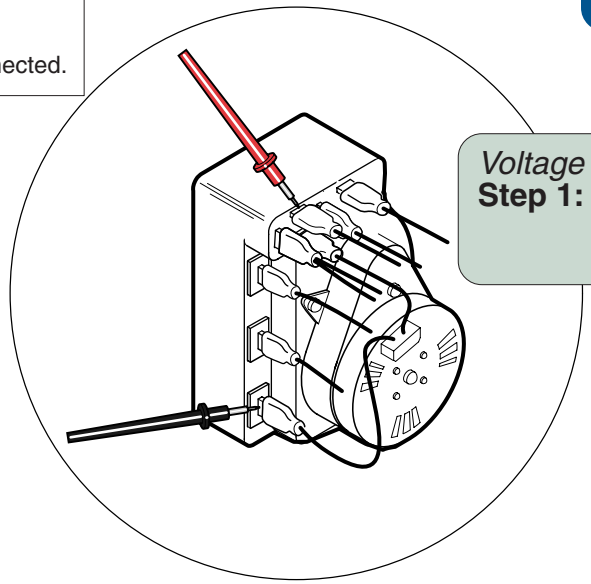
Refer to: **Page**
Cover Removal C-2
Supply Voltage Test B-27

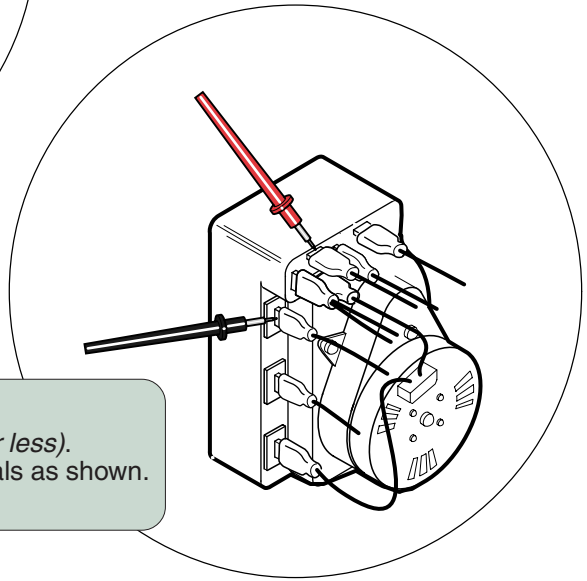
Caution
This test must be performed with the power cord connected.

Voltage to Temp. Relay
Step 1: Turn timer knob to 10 minutes.
Place meter probes on terminals as shown.
[Set meter to VAC]



Voltage to Timer Motor
Step 1: Turn timer knob to 10 minutes.
Place meter probes on terminals as shown.
[Set meter to VAC]

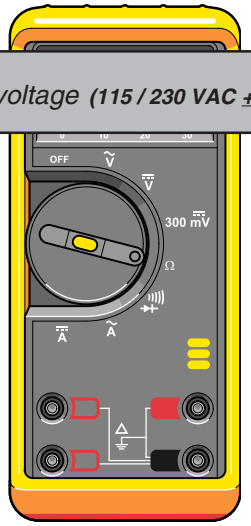




Voltage to Timer Buzzer
Step 1: Turn timer knob to 1 minute *(or less)*.
Place meter probes on terminals as shown.
[Set meter to VAC]

Acceptable Range

line voltage ***(115 / 230 VAC ±10%)***



MA675900i

Output VoltageTest
If reading is within range...
Timer is functioning properly.

If reading is out of range...
Replace timer.

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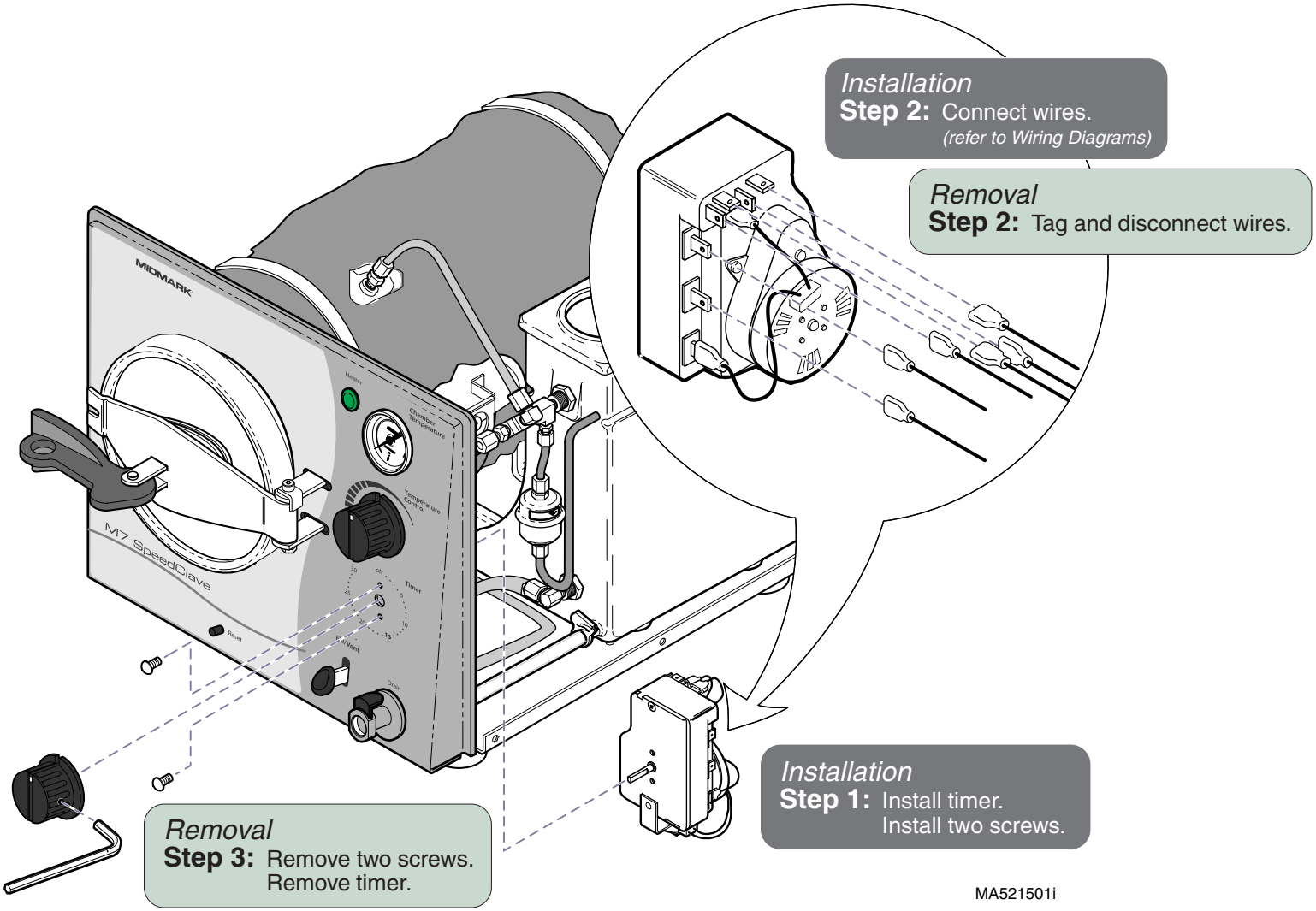
Component Testing & Repair

Timer - *continued*

Replacement

Refer to:	Page
Cover Removal	C-2
Wiring Diagrams	D-1



MA521501i

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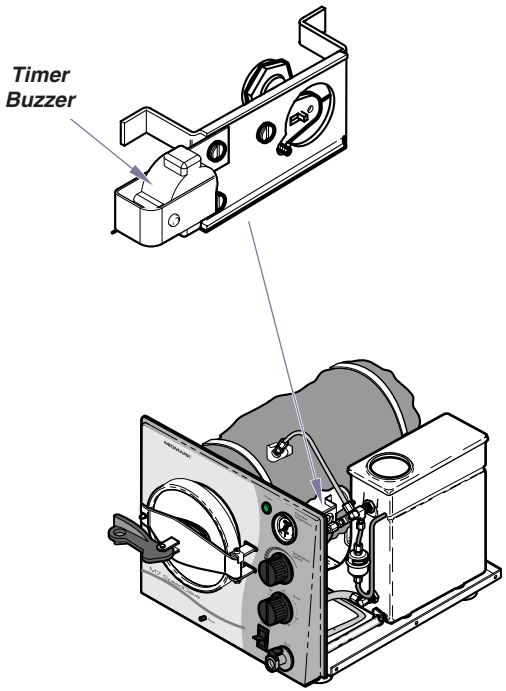
Component Testing & Repair

Timer Buzzer

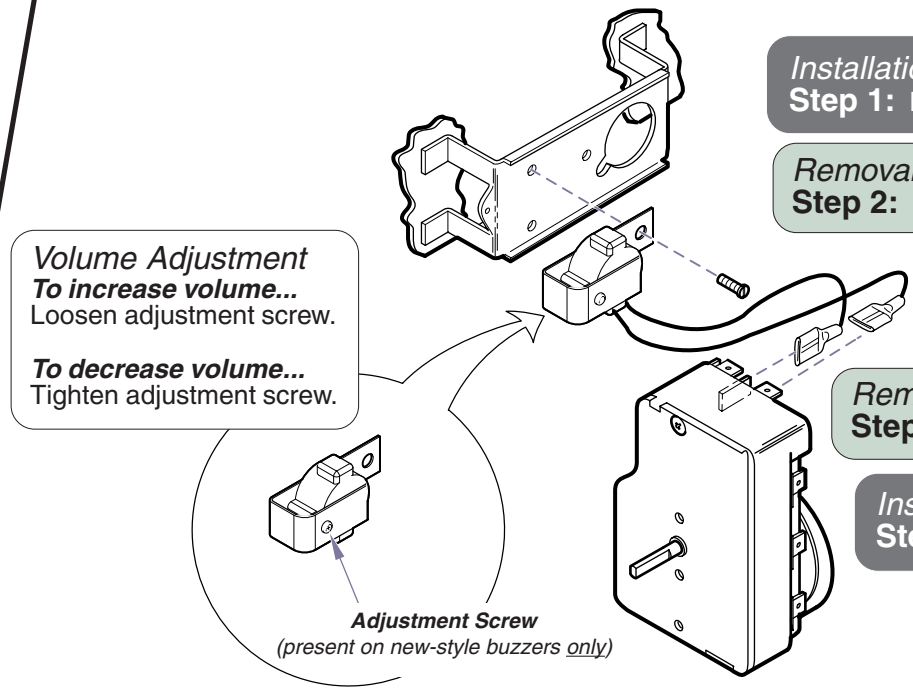
Timer Buzzer	Page
Location & Function	B-30
Testing - refer to:	
Timer	B-28
Replacement & Volume Adjustment	B-30
Exploded View / Part Numbers	E-12

Location & Function

When the timer setting expires...
Timer contacts to the buzzer close *for one minute*.
Current flows to the buzzer, causing an audible signal.



Replacement & Volume Adjustment



Installation
Step 1: Install buzzer.

Removal
Step 2: Remove buzzer.

Volume Adjustment
To increase volume...
Loosen adjustment screw.

To decrease volume...
Tighten adjustment screw.

Adjustment Screw
(present on new-style buzzers only)

Removal
Step 1: Disconnect buzzer wires.

Installation
Step 2: Connect buzzer wires.

MA676100i

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Component Testing & Repair

Temperature Gauge

Replacement

Temperature Gauge	Page
Replacement	B-31
Exploded View / Part Numbers	E-5

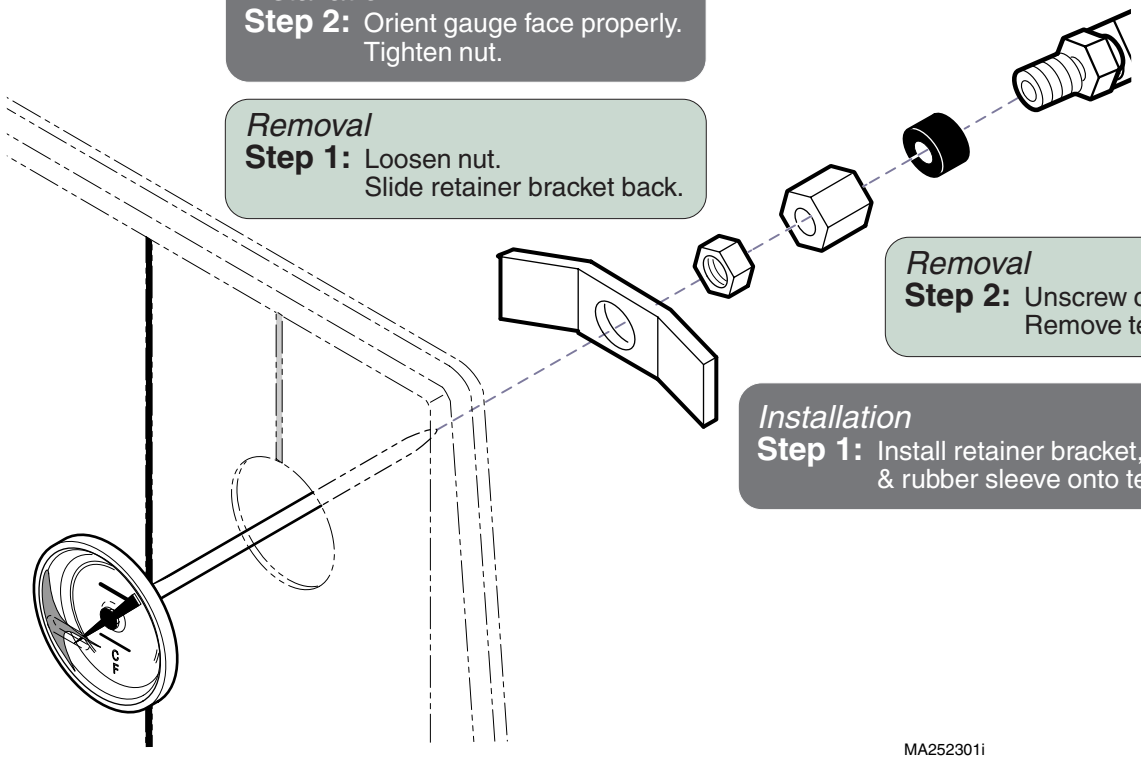
Installation
Step 3: Slide rubber sleeve back against fitting. Tighten compression nut. *(Do not overtighten).*

Installation
Step 2: Orient gauge face properly. Tighten nut.

Removal
Step 1: Loosen nut. Slide retainer bracket back.

Removal
Step 2: Unscrew compressionnut. Remove temperature gauge.

Installation
Step 1: Install retainer bracket, nut, compression nut, & rubber sleeve onto temperature gauge.



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Component Testing & Repair

Door Assembly

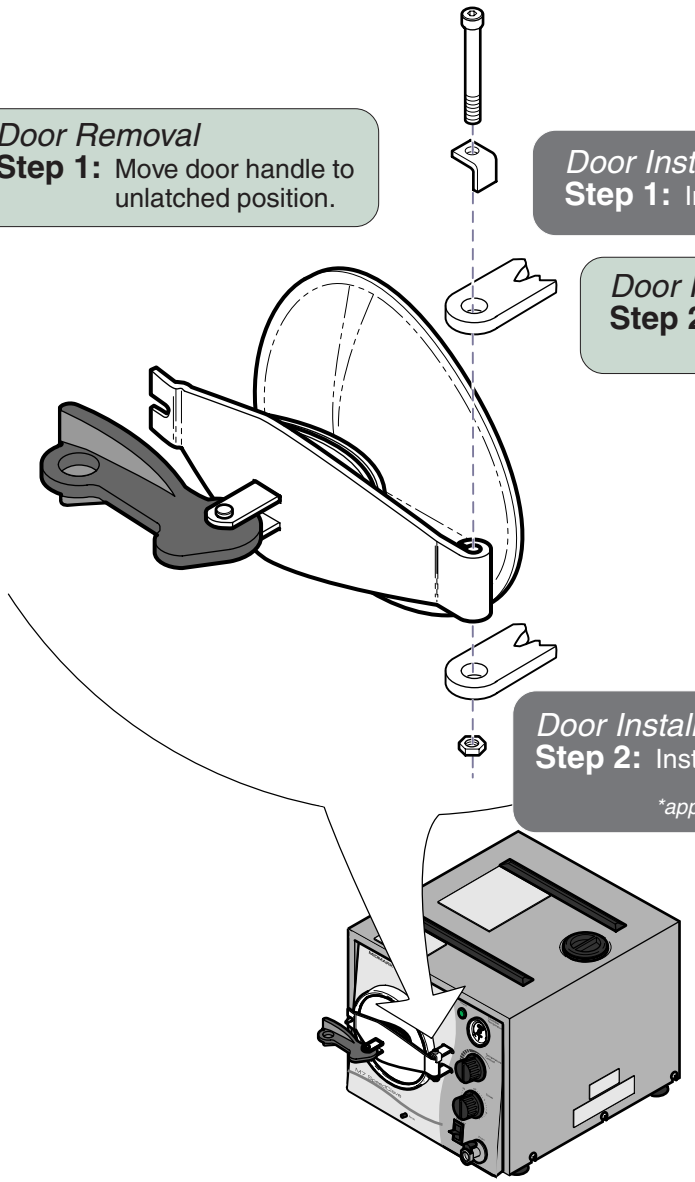
Door Assembly	Page
Testing - refer to:	
Checking for Pressure Leaks	B-2
Door Replacement	B-32
Gasket Replacement	B-32
Disassembly / Assembly	B-33
Exploded View / Part Numbers	E-6

Door Replacement

Door Removal
Step 1: Move door handle to unlatched position.

Door Installation
Step 1: Install door stop & screw.

Door Removal
Step 2: Remove nut, screw, & door stop.

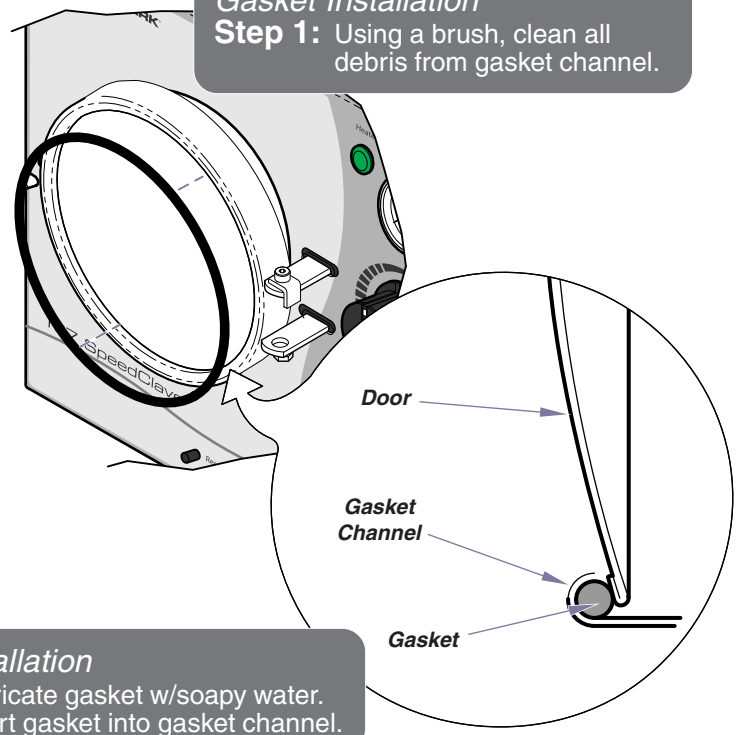


Door Installation
Step 2: Install nut* *(Do not overtighten)*

**apply removeable threadlocking adhesive*

Gasket Replacement

Gasket Installation
Step 1: Using a brush, clean all debris from gasket channel.



Gasket Installation
Step 2: Lubricate gasket w/soapy water. Insert gasket into gasket channel.

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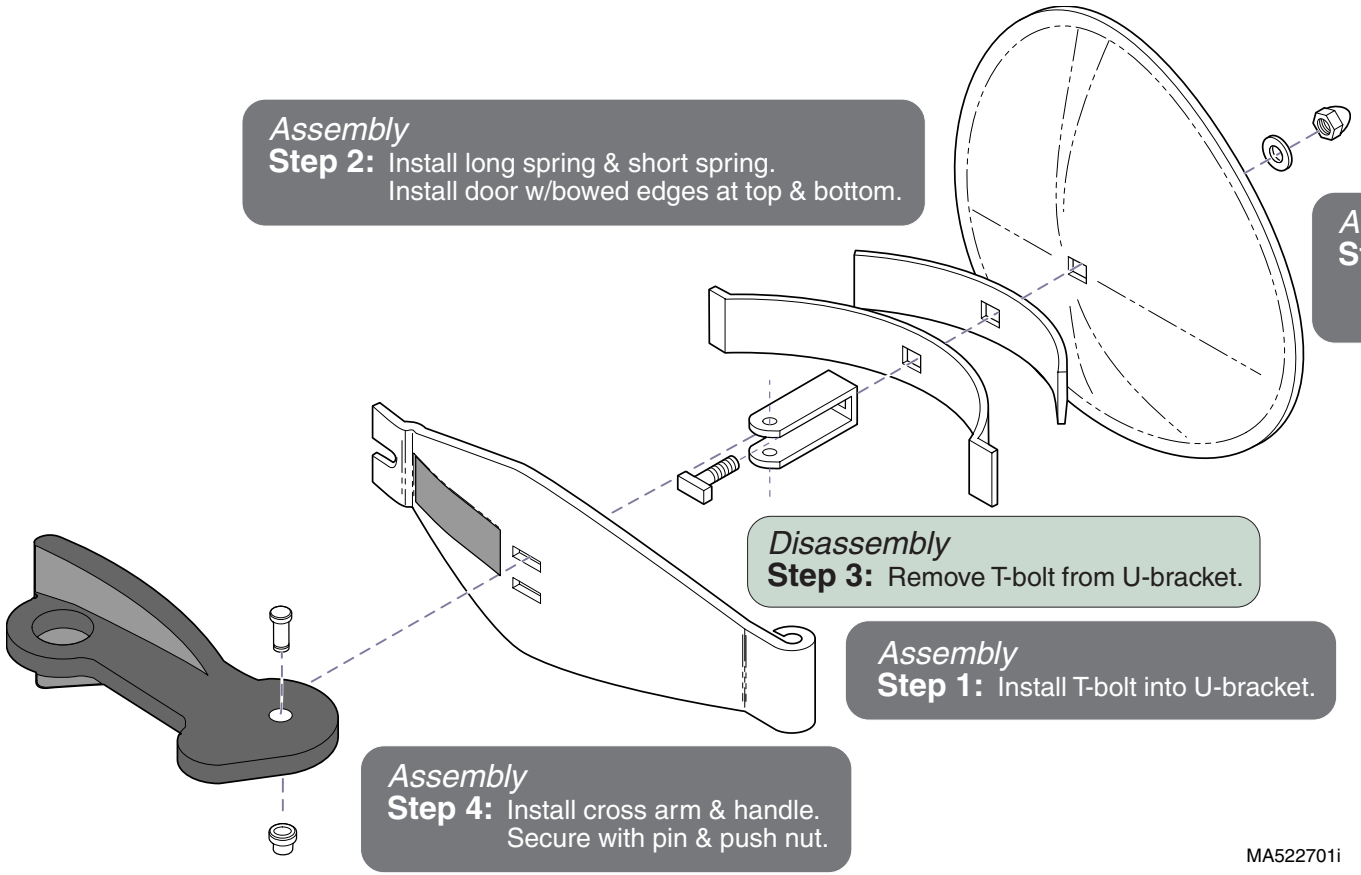
Component Testing & Repair

Door Assembly *- continued*

Disassembly / Assembly



Assembly
Step 2: Install long spring & short spring. Install door w/bowed edges at top & bottom.

Disassembly
Step 1: Remove cap nut, washer, & door. Remove short spring & long spring.

Assembly
Step 3: Apply removable threadlocking adhesive to T-bolt threads & face of washer. Install washer & cap nut.

Disassembly
Step 3: Remove T-bolt from U-bracket.

Assembly
Step 1: Install T-bolt into U-bracket.

Assembly
Step 4: Install cross arm & handle. Secure with pin & push nut.

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Disassembly
Step 2: Remove push nut, pin, handle, & cross arm.

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Component Testing & Repair

Reservoir Tank

Removal

Reservoir Tank	Page
Removal	B-34
Installation	B-35
Exploded View / Part Numbers	E-8

Removal
Step 1: Drain all water from reservoir.

Removal
Step 2: Loosen nut.

Removal
Step 3: Remove bulkhead fitting & washer.

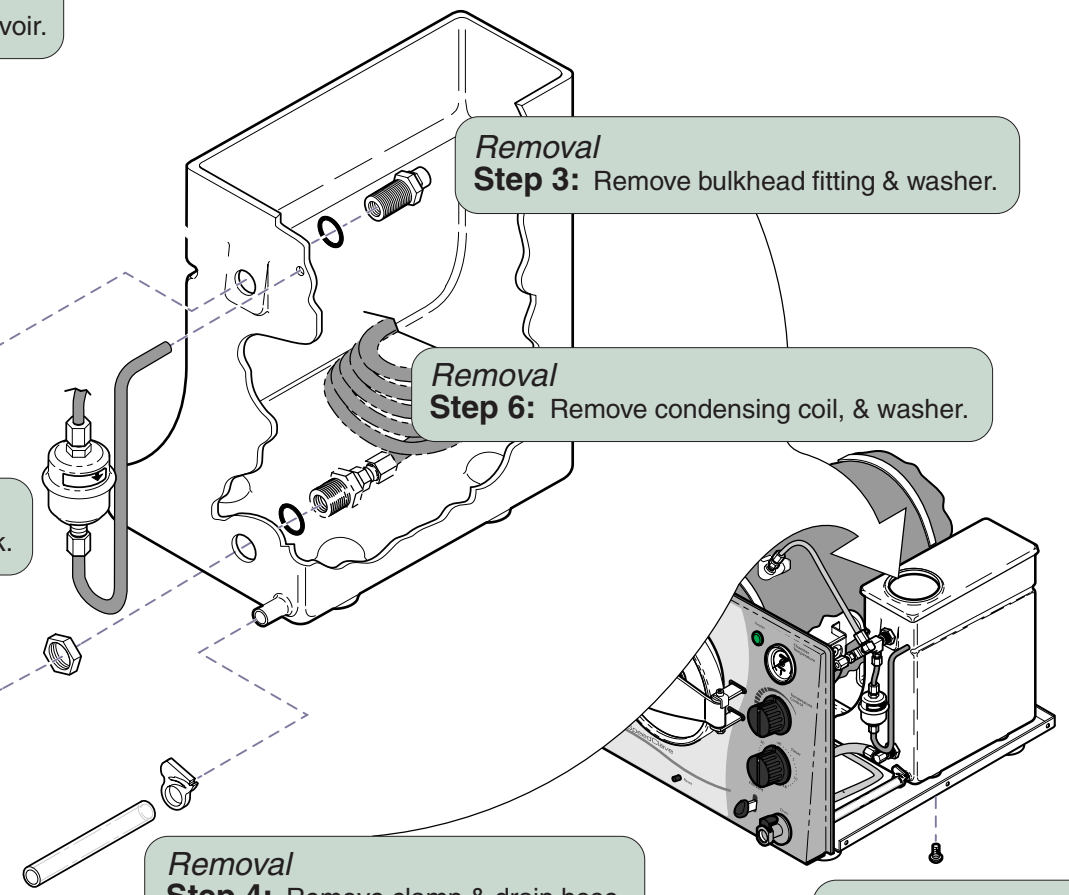
Removal
Step 4: Remove clamp & drain hose.

Removal
Step 5: Loosen nut.

Removal
Step 6: Remove condensing coil, & washer.

Removal
Step 7: Pull bellows tube out of tank.

Removal
Step 8: Remove four screws & tank.



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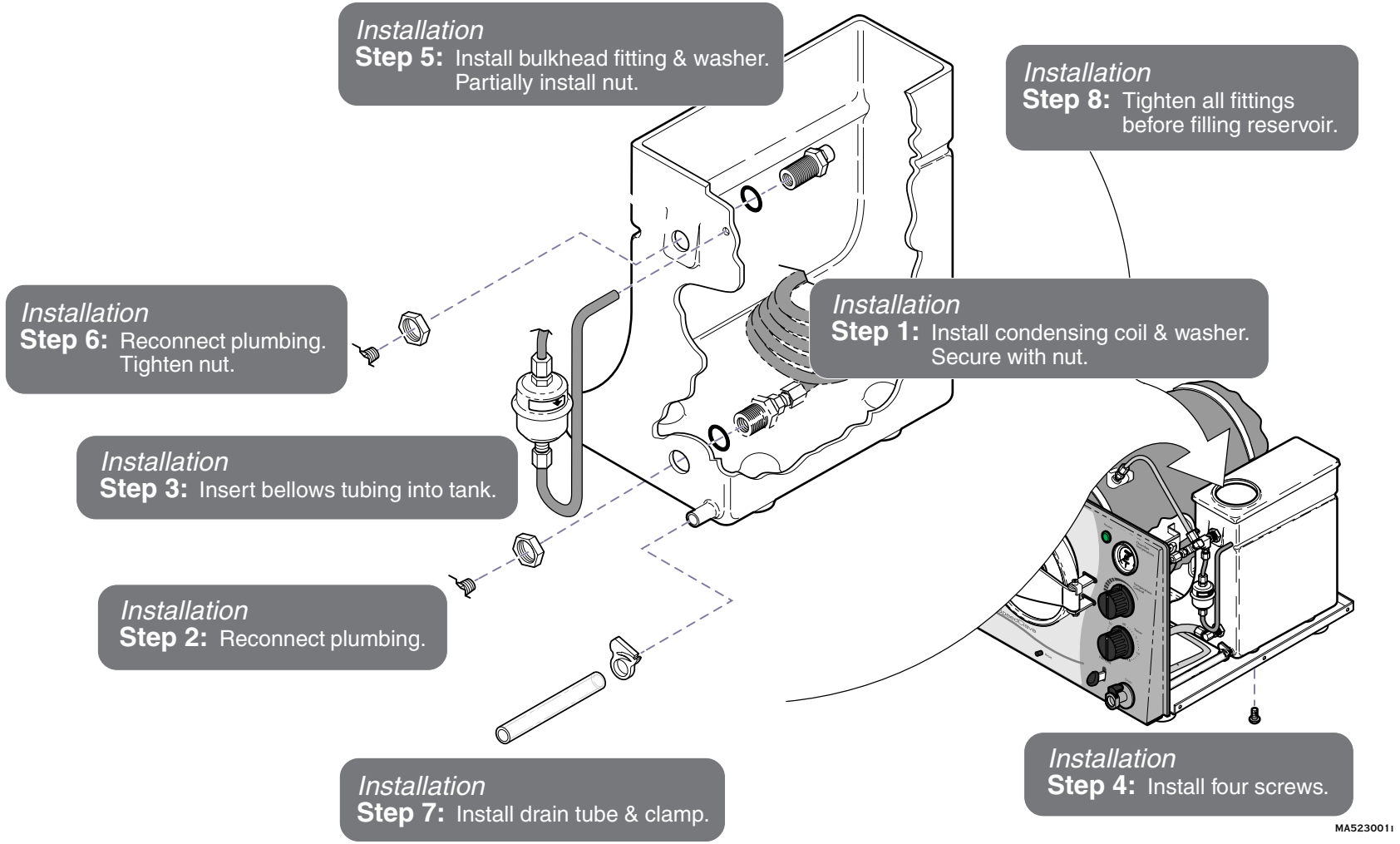
Component Testing & Repair

Reservoir Tank

Installation

Note
When reconnecting plumbing, apply teflon tape or sealant to threads - except where compression fittings are used.



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Component Testing & Repair

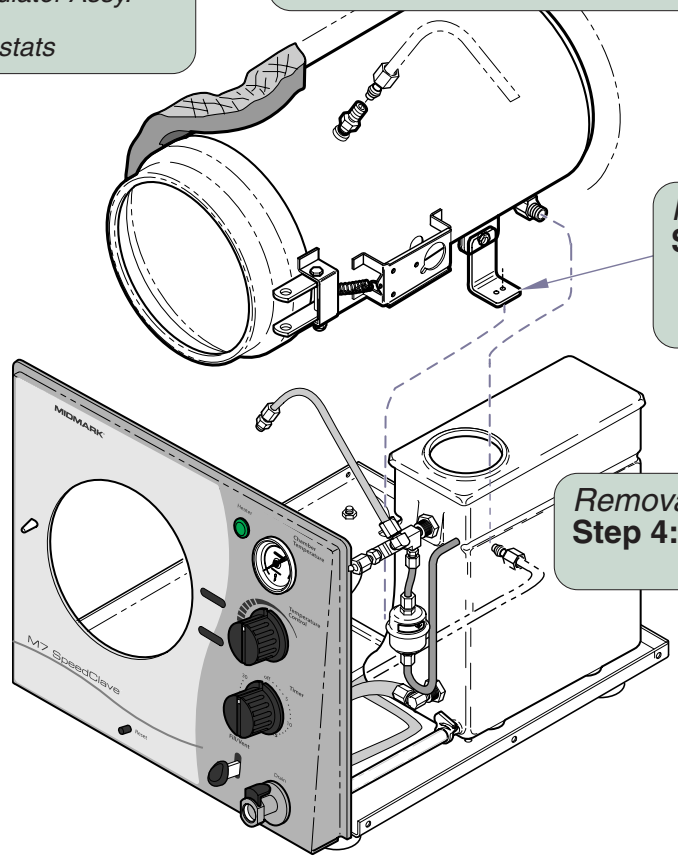
Chamber Assembly

Removal

Removal
Step 1: Drain all water from reservoir.

Removal
Step 2: Remove the following components:
Covers
Tray Plate / Rack
Door Assembly & Gasket
Temperature Regulator Assy.
Heating Element
Overheat Thermostats

Removal
Step 3: Disconnect compression fitting from top of chamber.



MA523101

Removal
Step 5: Remove screw(s) securing bracket* to base. Remove chamber.

** Bracket design may vary.*

Removal
Step 4: Disconnect compression fitting from bottom of chamber.

Chamber Assembly	**Page**
Removal	B-36
Disassembly / Assembly	B-37
Installation	B-38
Exploded View / Part Numbers	E-10

Refer to *(Removing)*:

Covers	C-2
Tray Plate / Rack	C-3
Door Assembly / Gasket	B-32
Temperature Regulator Assembly	B-15
Heating Element	B-20
Overheat Thermostats	B-24

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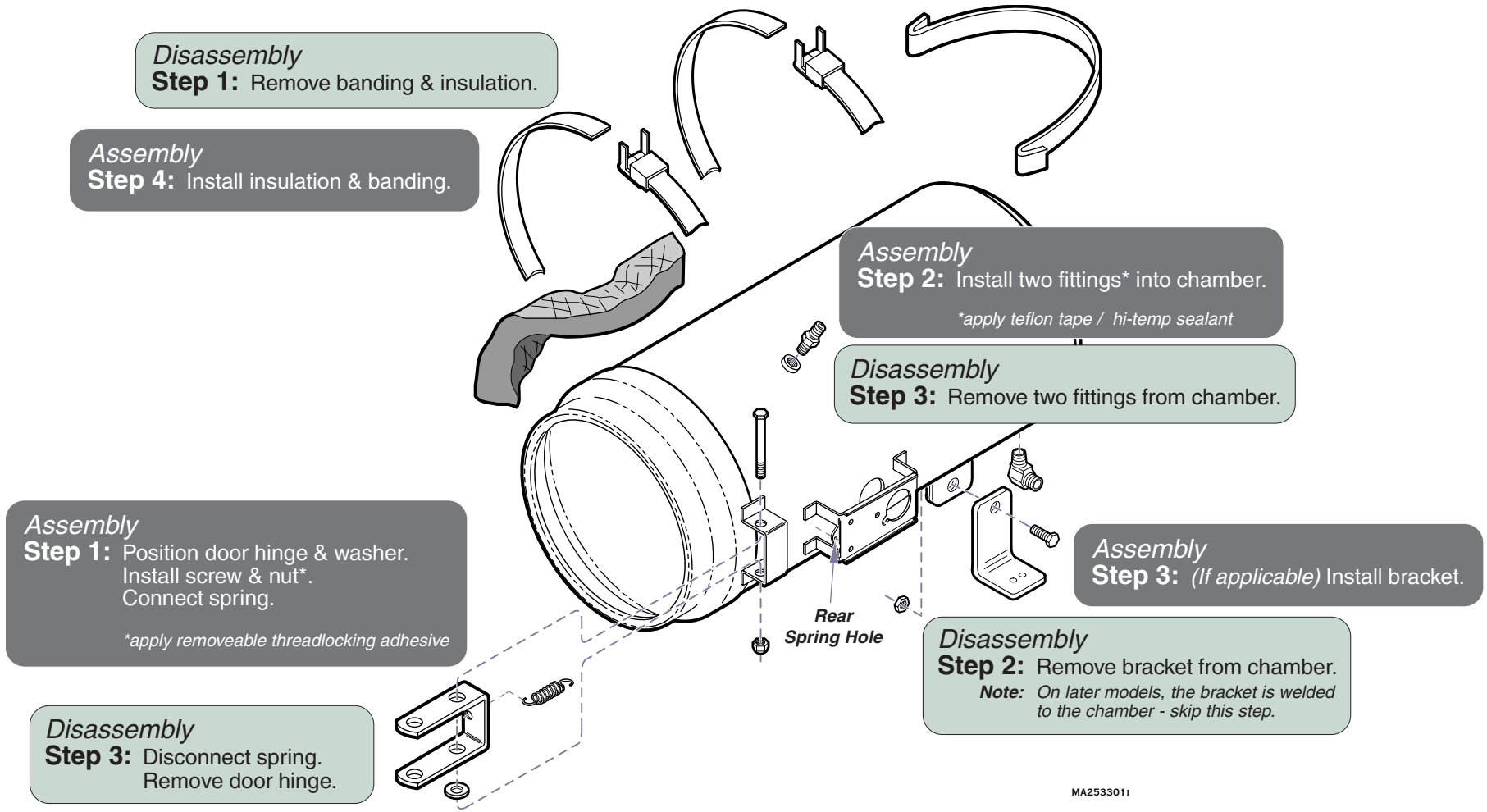
Component Testing & Repair

Chamber Assembly - *continued*

Disassembly / Assembly



Models:	M7 (-011 thru -016)	M7 (-020 thru -022)		
Serial Numbers:	all	all		

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Component Testing & Repair

Chamber Assembly- continued

Installation

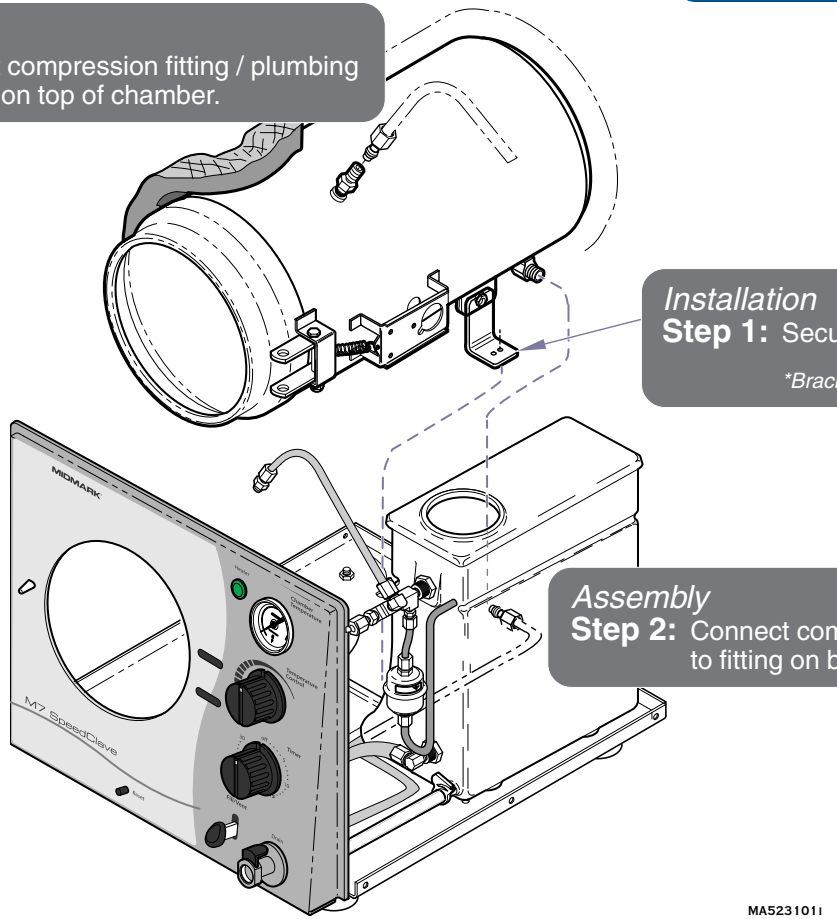
Note
Replace compression fittings if damage is apparent.

Refer to *(Installing)*:

Overheat Thermostats B-24
Heating Element B-20
Temperature Regulator Assembly B-16
Door Assembly / Gasket B-32
Tray Plate / Rack C-3
Covers C-2

Assembly
Step 3: Connect compression fitting / plumbing to fitting on top of chamber.

Assembly
Step 4: Install the following components:
Overheat Thermostats
Heating Element
Temperature Regulator Assy.
Door Assembly & Gasket
Tray Plate / Rack
Covers



Installation
Step 1: Secure bracket* to base.
**Bracket design may vary.*

Assembly
Step 2: Connect compression fitting / plumbing to fitting on bottom of chamber.

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Chamber Assembly

Models:	***M7 (-011 thru -016)***	***M7 (-020 thru -022)***		
Serial Numbers:	***all***	***all***		

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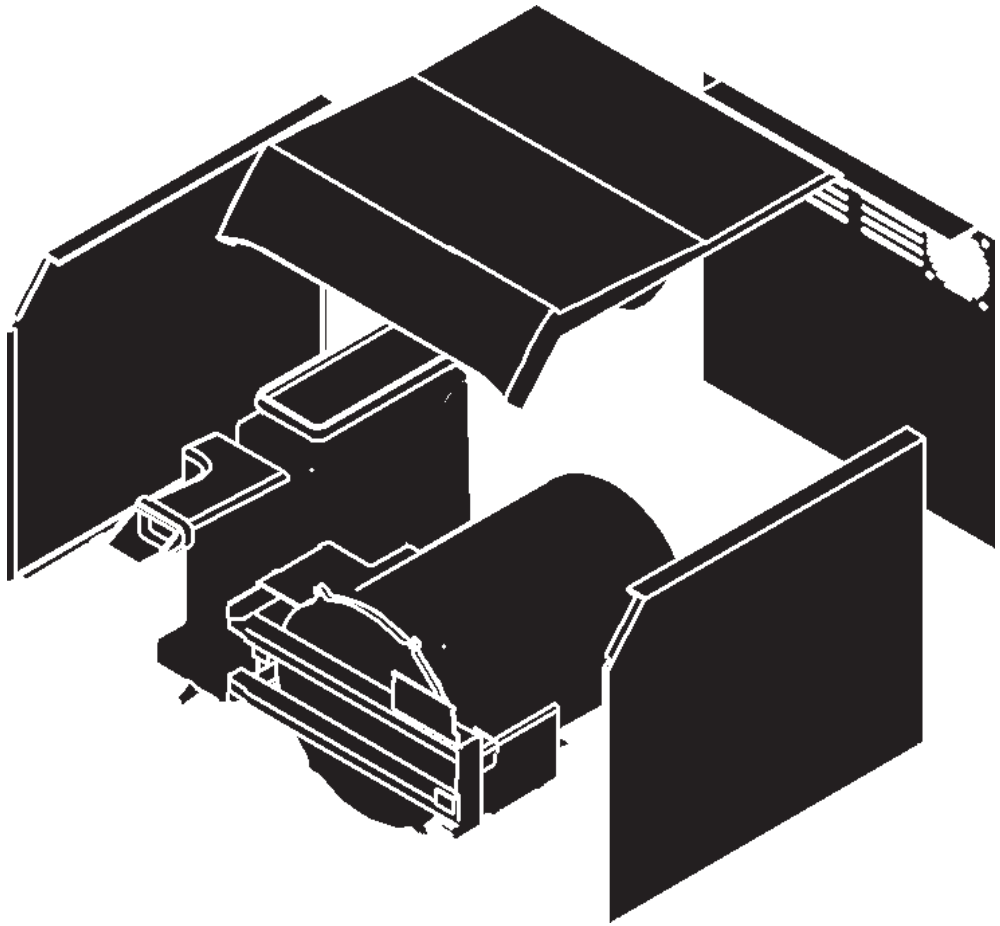
Section C

Access Procedures

Removing & Installing:	Page
Covers / Panels	C-2
Tray Plate / Rack	C-3
Draining / Filling the Reservoir	C-4



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Access Procedures

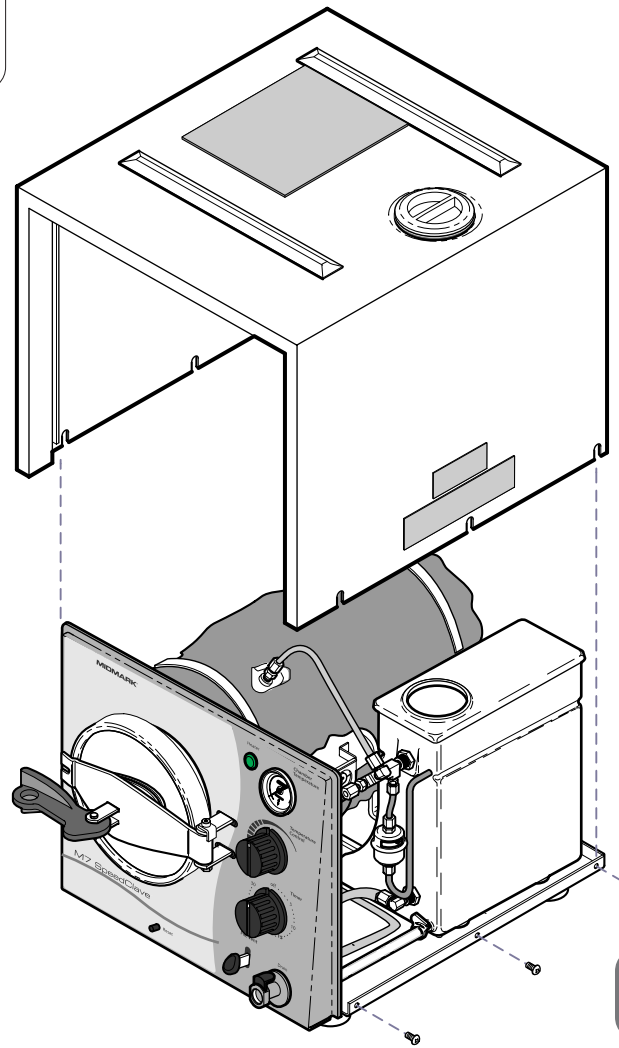
Covers / Panels

Removal / Installation

Caution
Always unplug power cord before removing any covers / panels.

Refer To:	Page
Operation & Troubleshooting	A-1
Component Testing / Repair	B-1
Access Procedures	C-1
Wiring Diagrams	D-1
Exposed Views / Part Numbers	E-1

Removal
Step 2: Remove cover.



Installation: M7 (-011 thru -016)
Step 1: Slide cover down over edge of front panel.

Installation: M7 (-020 thru -022)
Step 1: Slide cover down over edge of front panel & back panel *(not shown)*.

Removal
Step 1: Remove six screws.

Installation: M7 (all)
Step 2: Install six screws.

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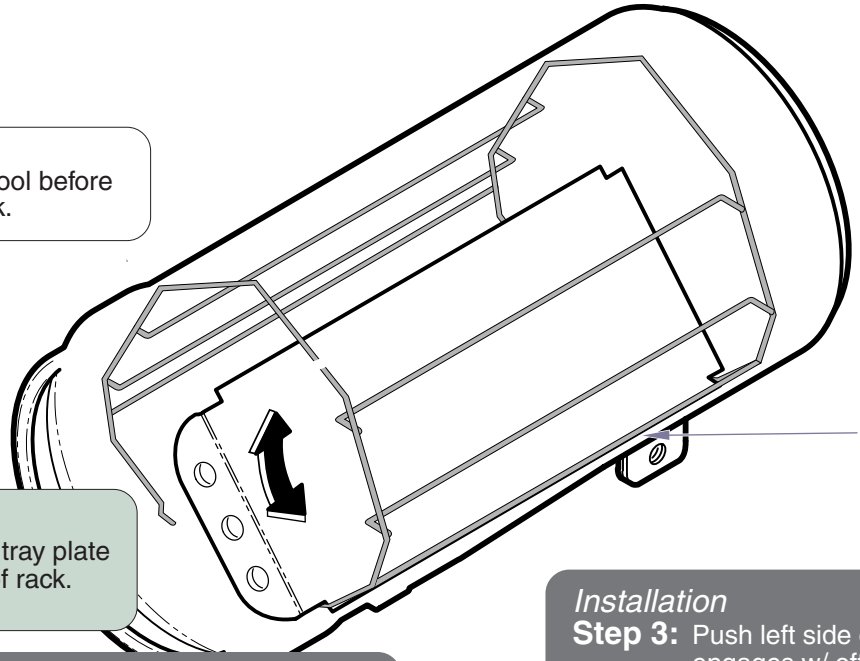
Access Procedures

Tray Plate / Rack

Removal / Installation

> ***Caution***
> Always allow unit to cool before removing trays or rack.

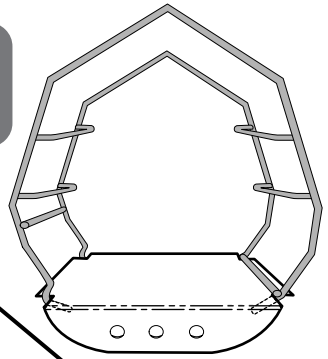
Refer To:	Page
Operation & Troubleshooting	A-1
Component Testing / Repair	B-1
Access Procedures	C-1
Wiring Diagrams	D-1
Exploded Views / Part Numbers	E-1



Removal
Step 1: Lift up on left side of tray plate until it "pops" free of rack. Remove tray plate.

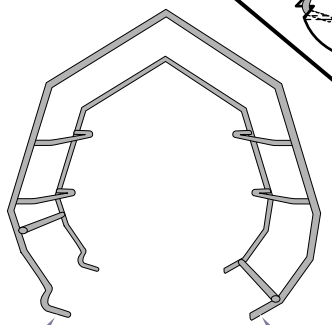
Installation
Step 2: Insert the right side of tray plate under bottom wire of rack.

Installation
Step 3: Push left side of plate down until it engages w/ offset ends of rack.



Removal
Step 2: Squeeze bottom of rack together. Pull rack out of chamber.

Installation
Step 1: Position rack w/ offset ends to the left. Squeeze bottom of rack together. Push rack into chamber.



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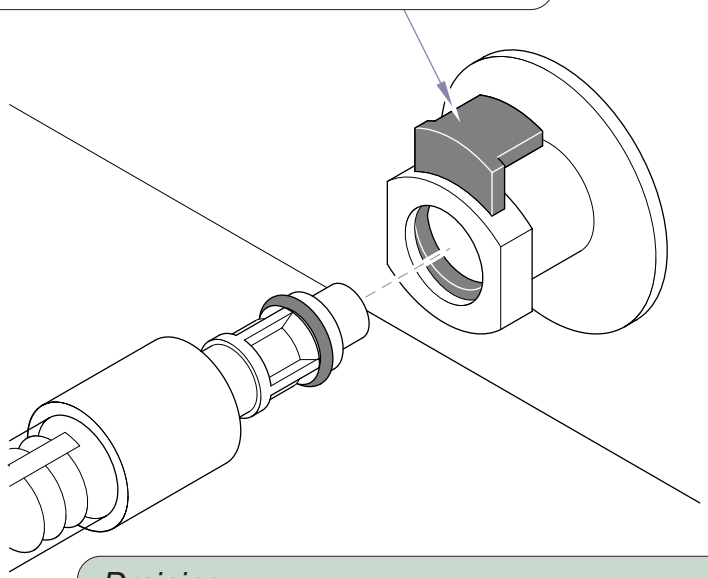
Access Procedures

Draining / Filling the Reservoir

Refer To:	Page
Operation & Troubleshooting	A-1
Component Testing / Repair	B-1
Access Procedures	C-1
Wiring Diagrams	D-1
Exploded Views / Part Numbers	E-1

Note: *To remove drain hose, press release lever.*



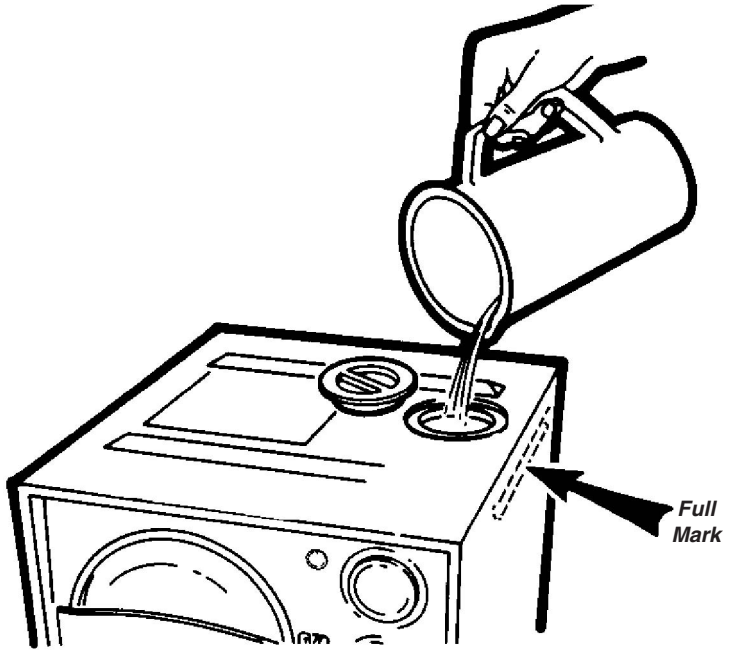
Draining

Step 1: Hold hose over a drain or suitable container. Insert drain hose into coupling on front of unit.

Note: *The max. reservoir capacity is: 1.3 gallon (4.9 liters)*

Filling

Step 1: Pour distilled water into reservoir until the water level reaches the "full mark". *Do **not** overfill!*



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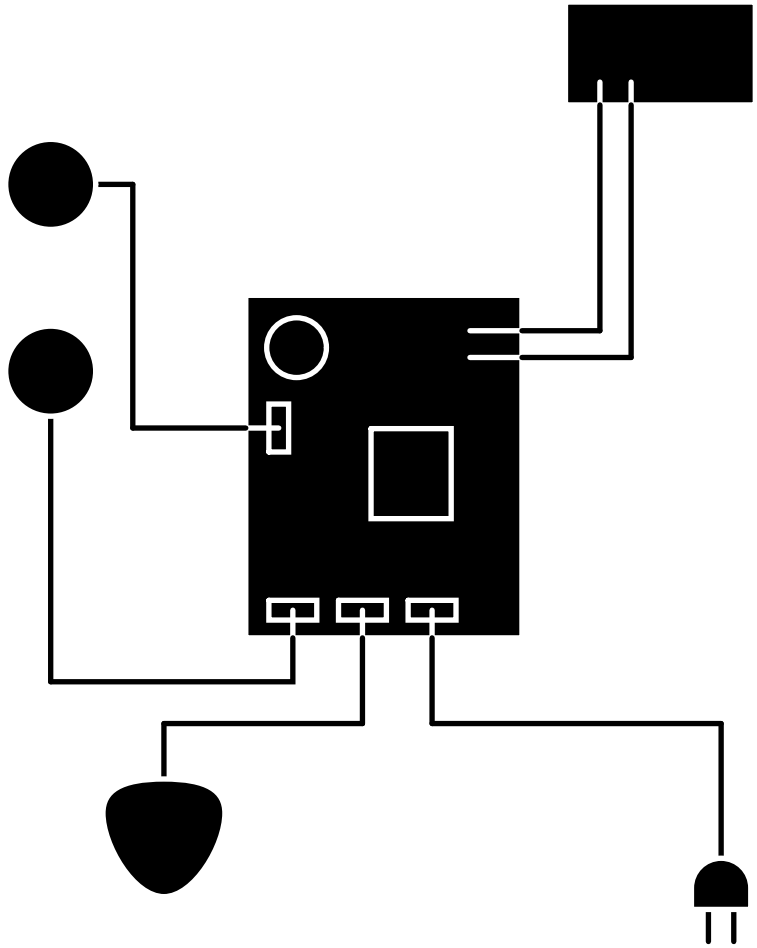
Section D

Wiring Diagrams & Schematics

Model	Page
115 VAC models:	
M7 (-011 / -013 / -014 / -015)	D-2
M7 (-020 / -022)	D-3
230 VAC models:	
M7 (-012 / -016)	D-4
M7 (-021)	D-5



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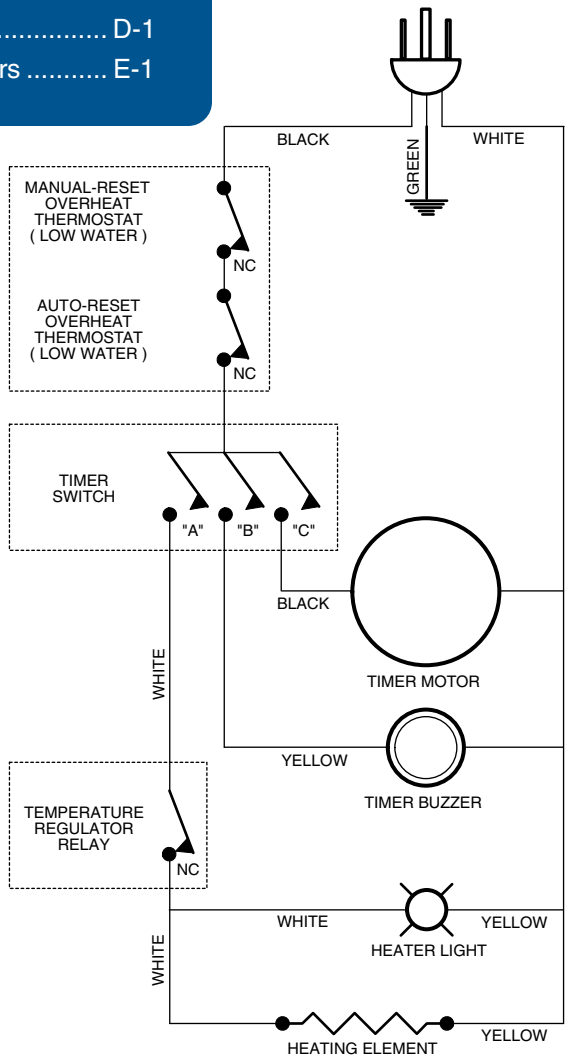
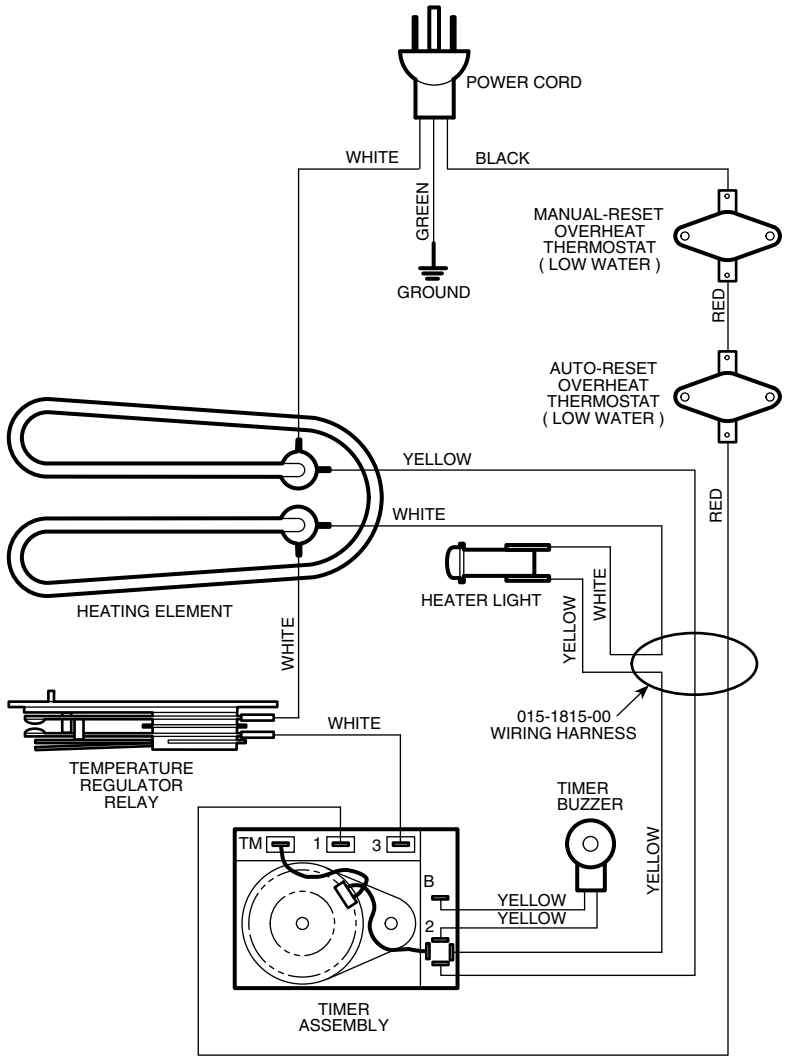
Wiring Diagrams

Refer To:	Page
Operation & Troubleshooting	A-1
Component Testing / Repair	B-1
Access Procedures	C-1
Wiring Diagrams	D-1
Exploded Views / Part Numbers	E-1





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Wiring Diagrams
(115 VAC Models)

Models: / *Serial Numbers:*	*M7 (-011)*	*M7 (-013)*	*M7 (-014)*	*M7 (-015)*
	all	*all*	*all*	*all*

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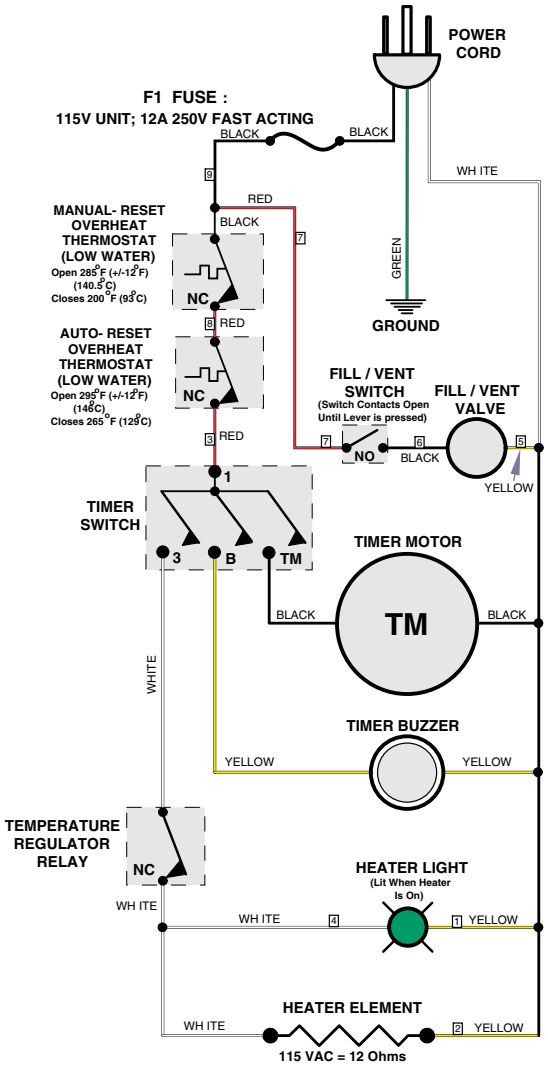
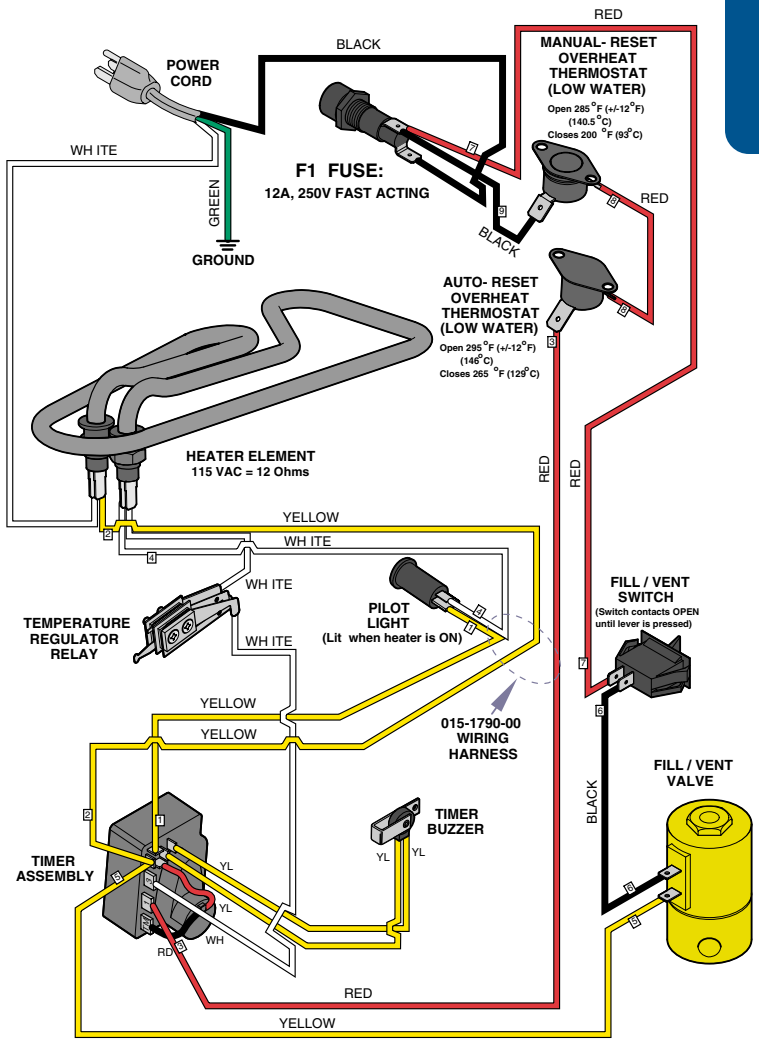
Wiring Diagrams

Refer To:	Page
Operation & Troubleshooting	A-1
Component Testing / Repair	B-1
Access Procedures	C-1
Wiring Diagrams	D-1
Exploded Views / Part Numbers	E-1





Models:	M7 (-020)	M7 (-022)		
Serial Numbers:	all	all		

Wiring Diagrams
(115 VAC Models)

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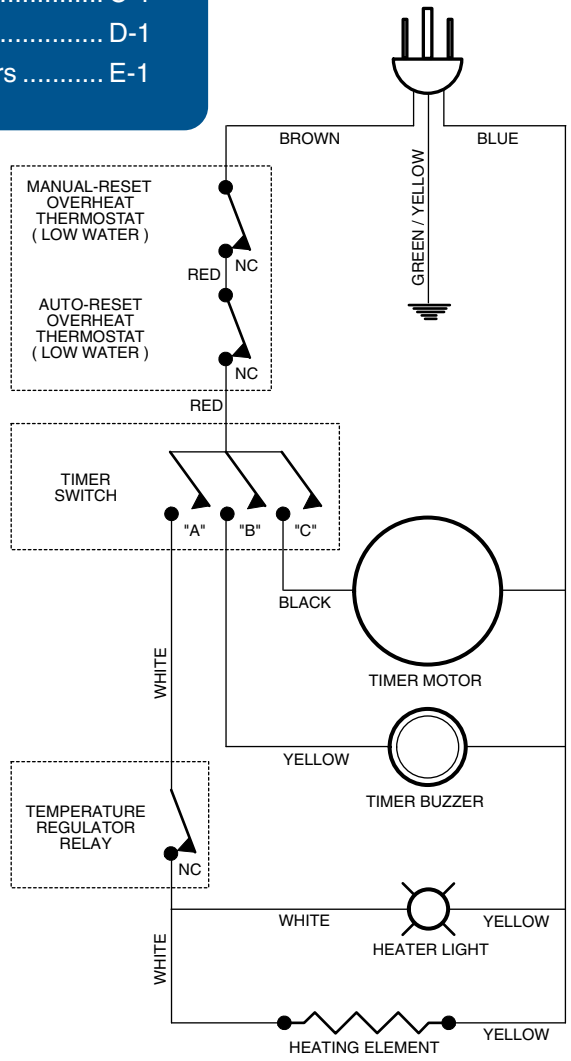
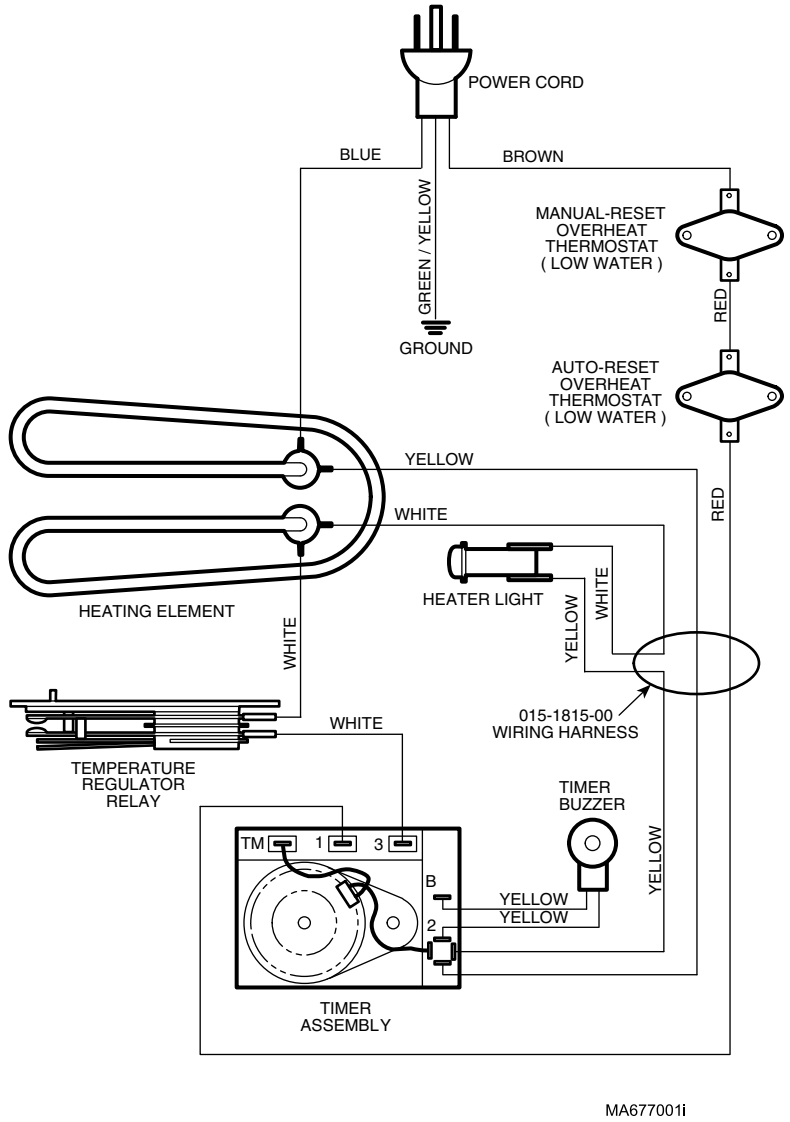
Wiring Diagrams

Refer To:	Page
Operation & Troubleshooting	A-1
Component Testing / Repair	B-1
Access Procedures	C-1
Wiring Diagrams	D-1
Exploded Views / Part Numbers	E-1





MA677001i

Wiring Diagrams
(230 VAC Models)

Models:	***M7 (-012)***	***M7 (-016)***	
Serial Numbers:	***all***	***all***	

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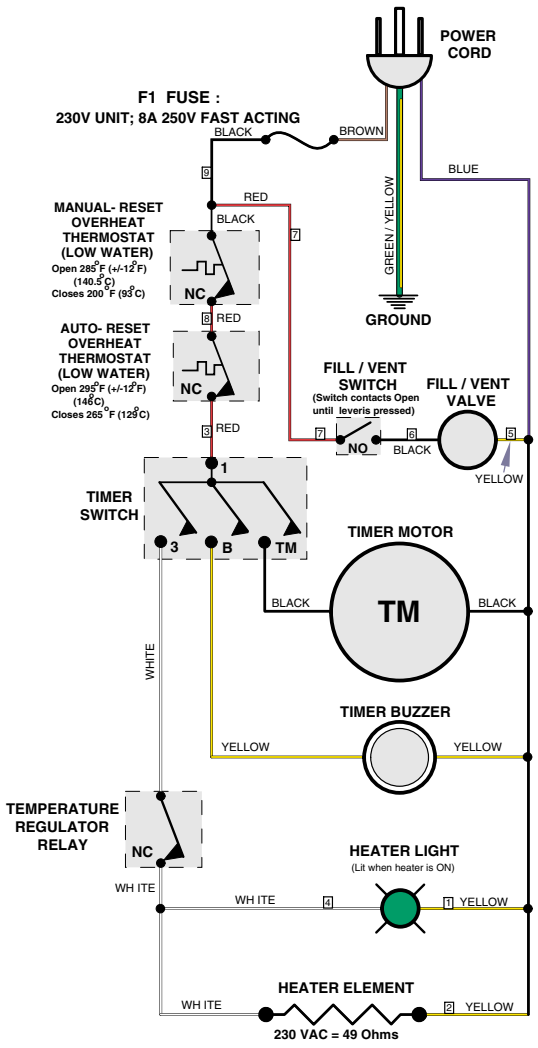
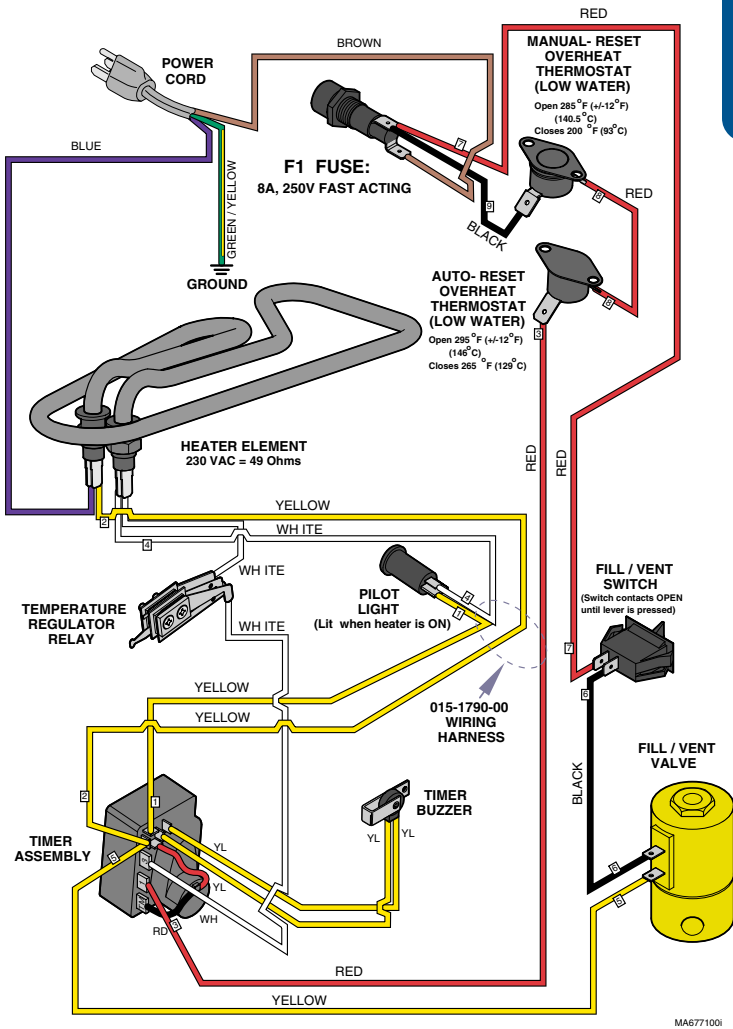
Wiring Diagrams

Refer To:	Page
Operation & Troubleshooting	A-1
Component Testing / Repair	B-1
Access Procedures	C-1
Wiring Diagrams	D-1
Exploded Views / Part Numbers	E-1





Models: / Serial Numbers:	M7 (-021) all			

Wiring Diagrams *(230 VAC Models)*

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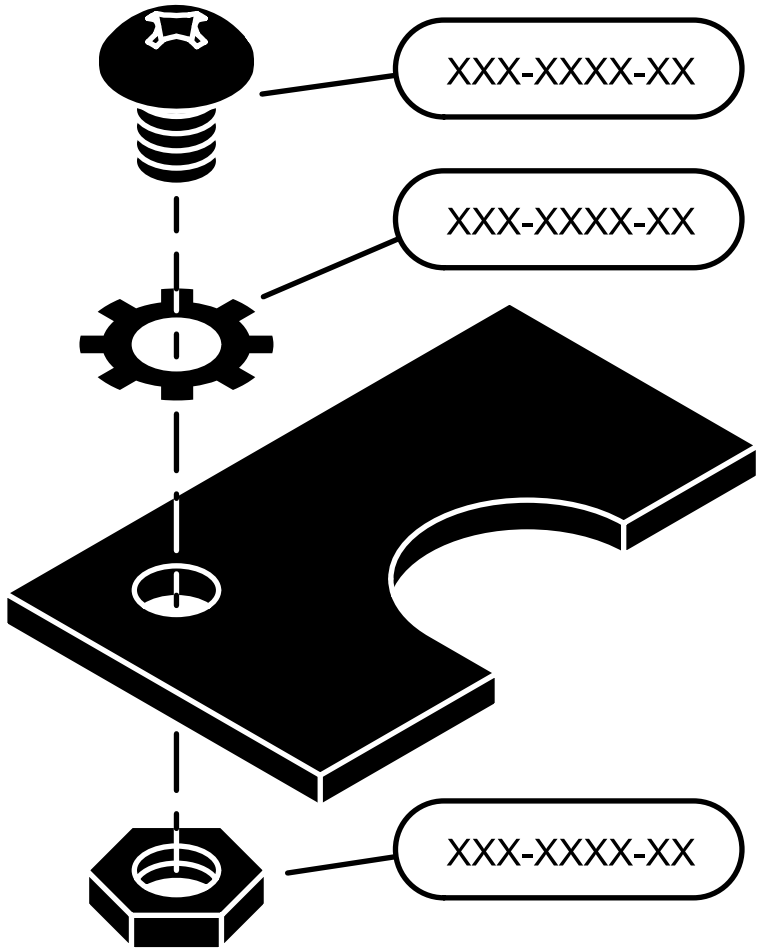
Section E

Exploded Views & Parts Lists

Model	Page
M7 *(-011 thru -016)*	E-2
M7 *(-020 thru -022)*	E-3



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M7 *(-011 thru -016)*

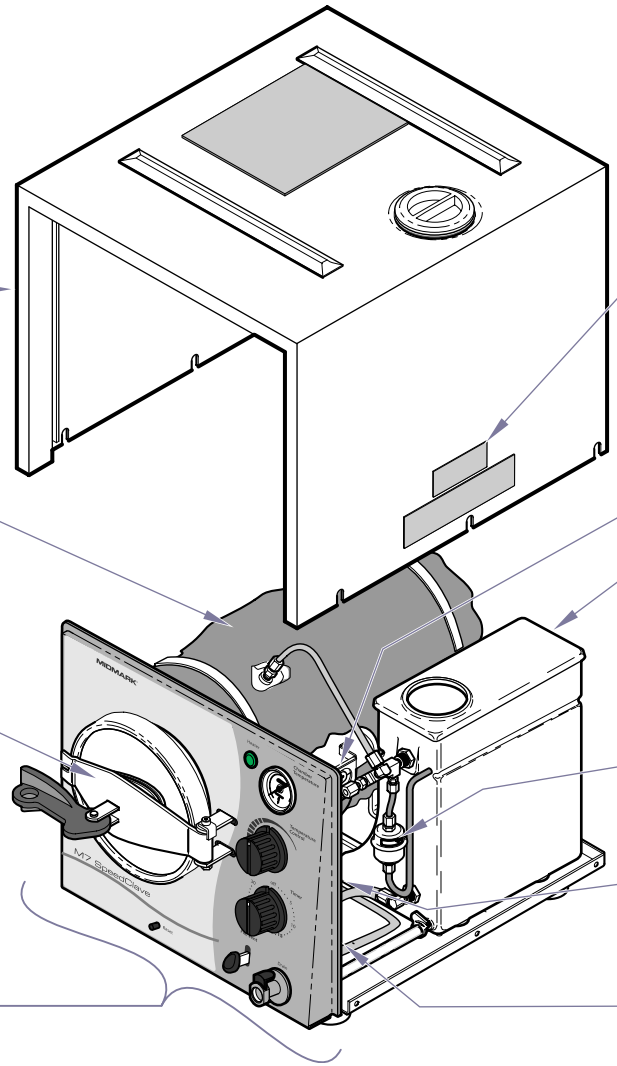
Items not shown:
Heating Element & Thermostats E-13
Power Cord E-14
Rack & Trays E-15
Packaging E-16

Covers E-4
includes:
main cover, base plate, leveling feet, fill cap, etc.

Chamber Components E-10
includes:
fittings & mounting bracket

Door Components E-6
includes:
hinge, & door gasket

Front Panel Components E-5
includes:
heater light, thermometer, knobs, & drain coupling



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Labels & Decals E-17

Temperature Regulator Components E-7
includes:
temp. relay & diaphragm cup

Reservoir E-8
includes:
condensing coil & drain tube

Bellows & Plumbing ... E-11*

Timer & Buzzer E-12

Fill / Vent Valve & Plumbing E-9*

** Indicates multiple pages due to a serial number break for the parts illustration*

M7 *(-020 thru -022)*

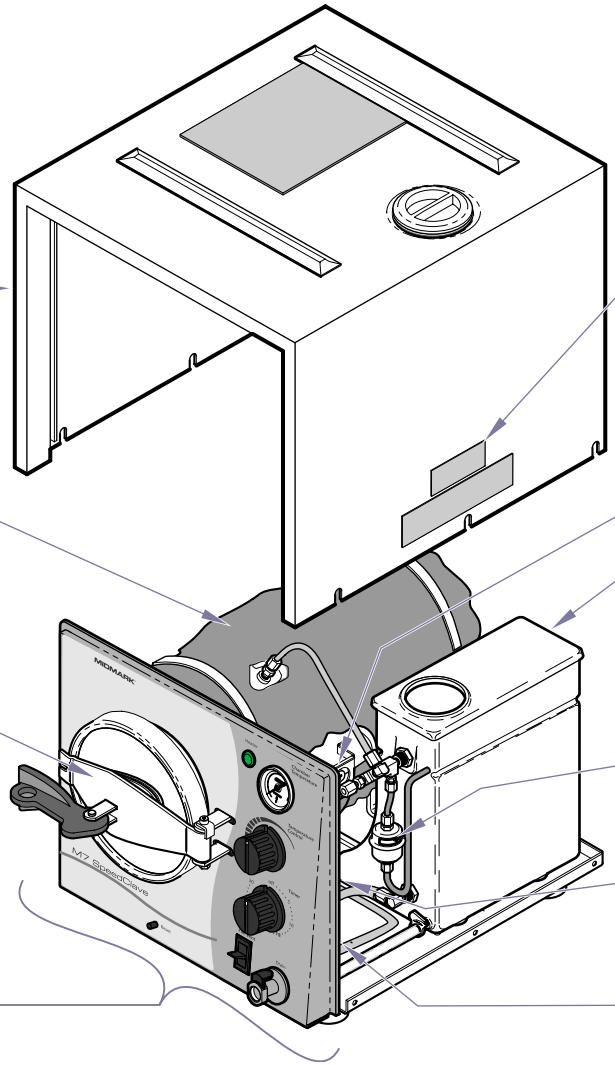
Items not shown:
Heating Element & Thermostats E-13.1
Power Cord & Fuse E-14.1
Rack & Trays E-15
Packaging E-16

Covers E-4.1
includes:
main cover, base plate, leveling feet, fill cap, etc.

Chamber Components E-10.1
includes:
fittings & mounting bracket

Door Components E-6
includes:
hinge, & door gasket

Front Panel Components E-5.1
includes:
heater light, thermometer, knobs, & drain coupling



Labels & Decals E-17.1

Temperature Regulator Components E-7
includes:
temp. relay & diaphragm cup

Reservoir Tank E-8.1
includes:
condensing coil & drain tube

Bellows & Plumbing ... E-11.2

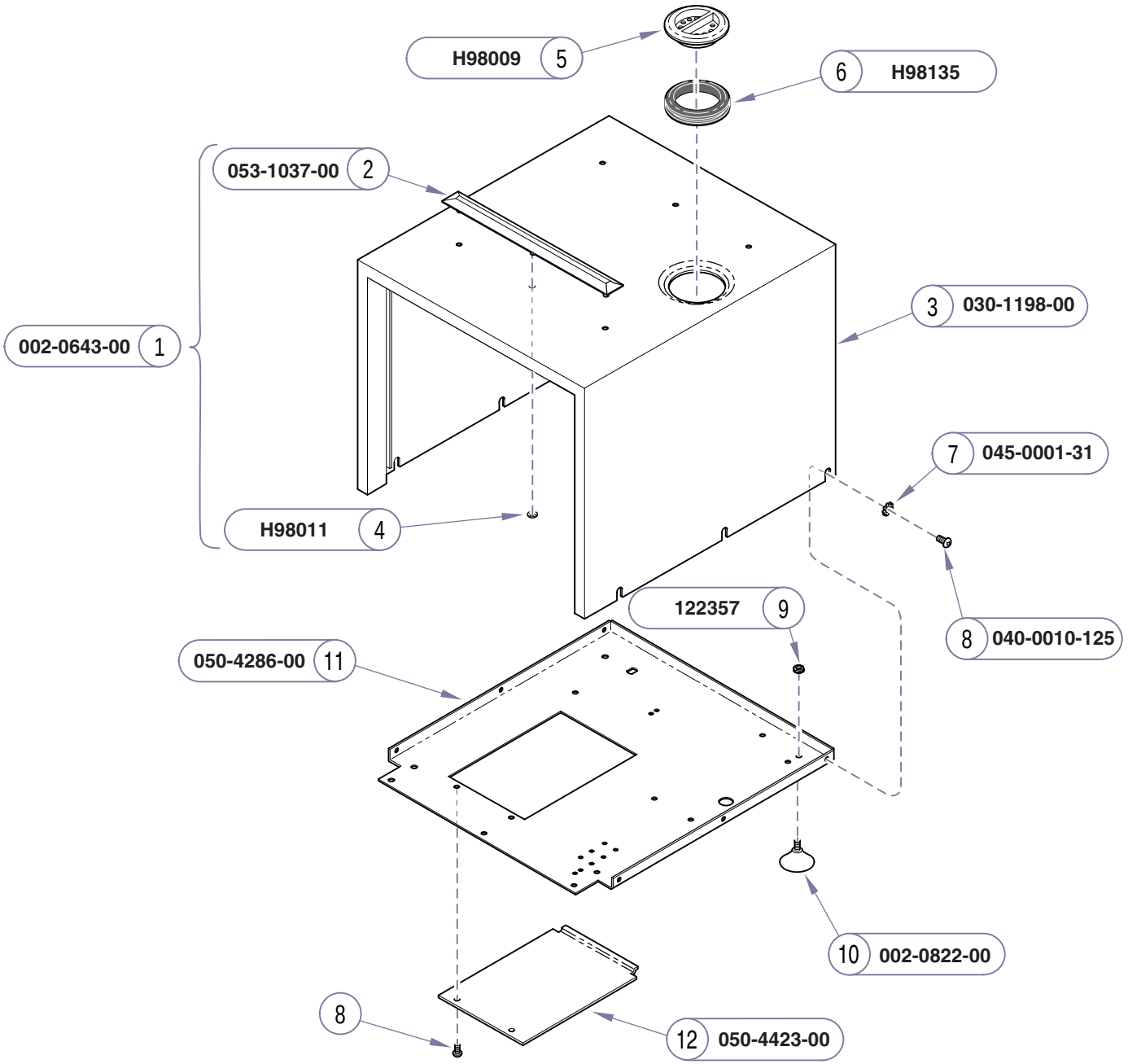
Timer & Buzzer E-12

Fill / Vent Valve & Plumbing E-9.3
includes:
fill/vent switch

** Indicates multiple pages due to a serial number break for the parts illustration*

Refer To: **Page**

Operation & Troubleshooting A-1
Component Testing / Repair B-1
Access Procedures C-1
Wiring Diagrams D-1
Exploded Views / Part Numbers .. E-1



Item	Description	Qty.
1	Cover Kit *(Includes items 2 thru 4)*	1
2	• Cooling Rail	2
3	• Main Cover	1
4	• Push Nut	6
5	Fill Cap	1
6	Rubber Seal	1
7	Lockwasher	6
8	Screw *(#10 x 1/2", self-tapping)*	6
9	Keps Nut	4
10	Rubber Foot Kit *(includes nut)*	4
11	Base Plate	1
12	Inspection Cover	1

Always Specify Model & Serial Number

Covers

Models: ***M7 (-011 thru -016)***
Serial Numbers: ***all***

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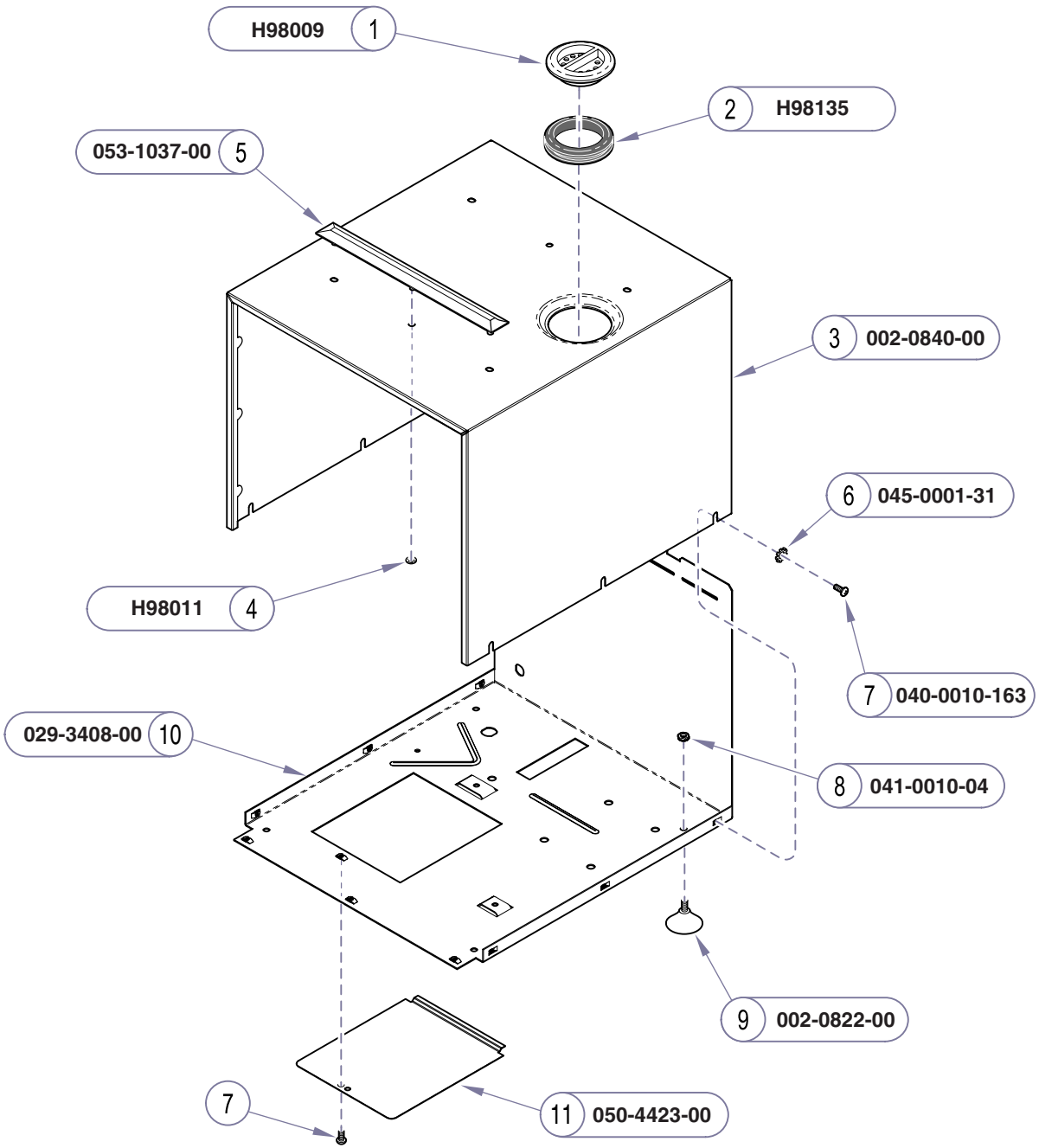
Refer To: **Page**

Operation & Troubleshooting A-1
Component Testing / Repair B-1
Access Procedures C-1
Wiring Diagrams D-1
Exploded Views / Part Numbers .. E-1



MA674101i

Item	Description	Qty.
1	Fill Cap	1
2	Rubber Seal	1
3	Main Cover w/ labels *(includes items 4 & 5)*	1
4	Push Nut	6
5	Cooling Rail	2
6	Lockwasher	1
7	Screw *(#10 x 5/8", self-drilling/tapping)*	7
8	Nut *(used only on units built prior to serial number V411489)*	4
9	Rubber Foot Kit *(includes nut)*	4
10	Base Assembly	1
11	Inspection Cover	1

Always Specify Model & Serial Number

Models: *M7 (-020 thru -022)*
Serial Numbers: *all*

Covers

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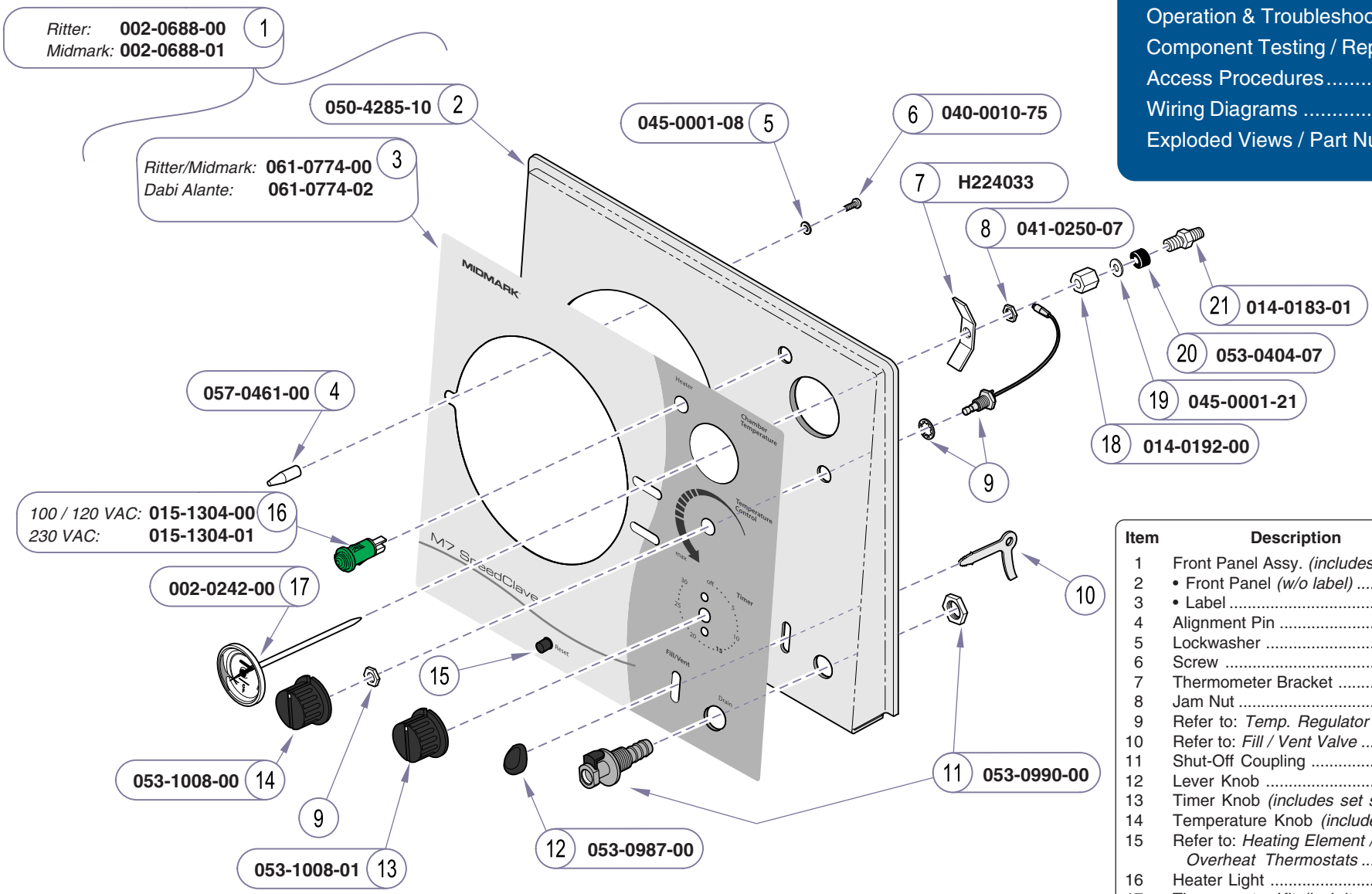
Refer To:	Page
Operation & Troubleshooting	A-1
Component Testing / Repair	B-1
Access Procedures	C-1
Wiring Diagrams	D-1
Exploded Views / Part Numbers	E-1



Item	Description	Qty.
1	Front Panel Assy. *(includes items 2 & 3)*	1
2	• Front Panel *(w/o label)*	1
3	• Label	1
4	Alignment Pin	1
5	Lockwasher	1
6	Screw	1
7	Thermometer Bracket	1
8	Jam Nut	1
9	Refer to: *Temp. Regulator Components* E-7	
10	Refer to: *Fill / Vent Valve* E-9	
11	Shut-Off Coupling	1
12	Lever Knob	1
13	Timer Knob *(includes set screw)*	1
14	Temperature Knob *(includes set screw)*	1
15	Refer to: *Heating Element / Overheat Thermostats* E-13	
16	Heater Light	1
17	Thermometer Kit *(incl. items 18 thru 21)*	1
18	• Compression Nut	1
19	• Washer (#6 - 5/16" O.D.)	1
20	• Rubber Sleeve	1
21	• Male Connector	1

Always Specify Model & Serial Number

MA671907i

Front Panel Components

Models: ***M7 (-011 thru -016)***
Serial Numbers: ***all***

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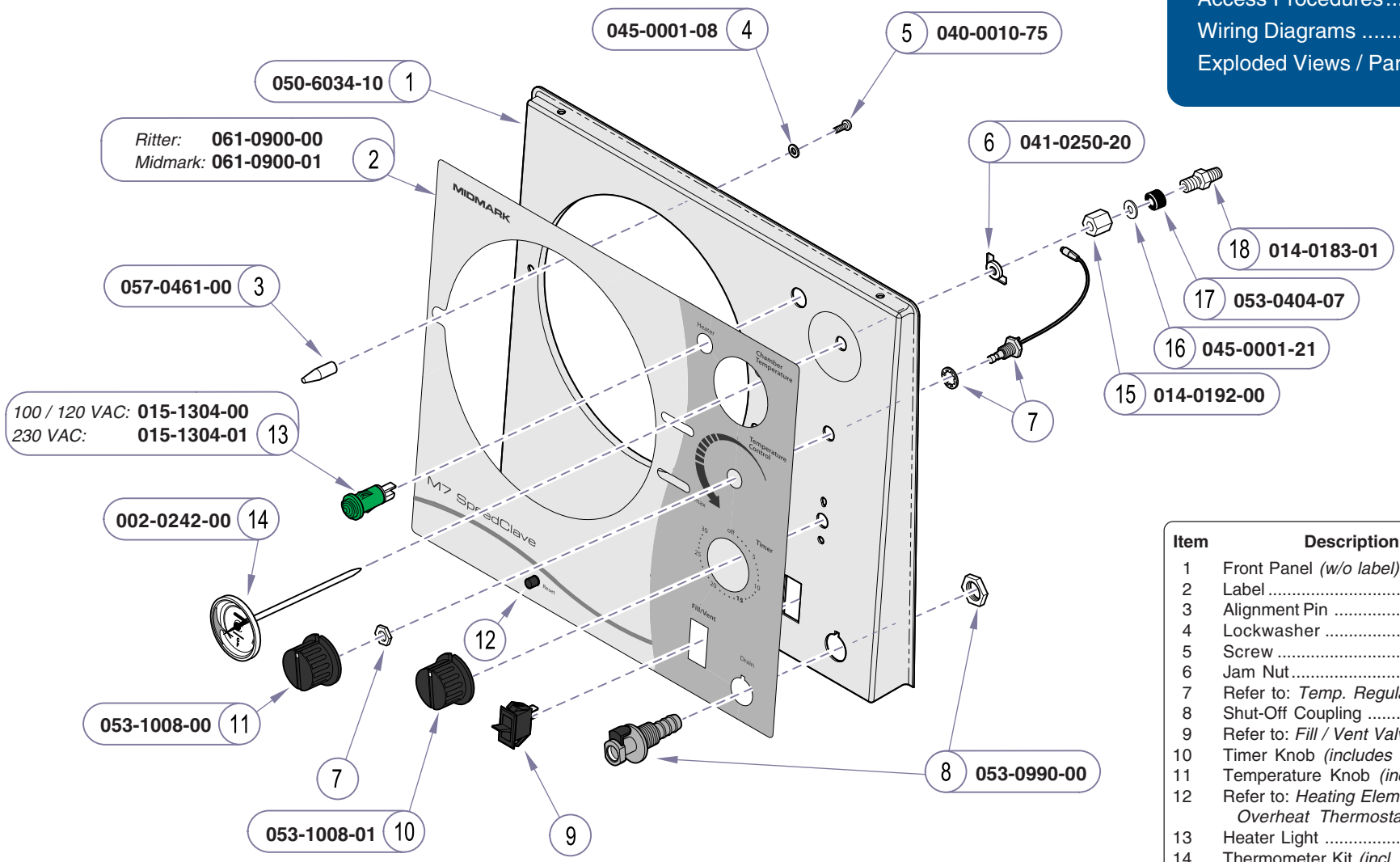
Refer To: **Page**

Operation & Troubleshooting A-1
Component Testing / Repair B-1
Access Procedures C-1
Wiring Diagrams D-1
Exploded Views / Part Numbers .. E-1



Item	Description	Qty.
1	Front Panel *(w/o label)*	1
2	Label	1
3	Alignment Pin	1
4	Lockwasher	1
5	Screw	1
6	Jam Nut	1
7	Refer to: *Temp. Regulator Components* E-7	
8	Shut-Off Coupling	1
9	Refer to: *Fill / Vent Valve* E-9	
10	Timer Knob *(includes setscrew)*	1
11	Temperature Knob *(includes setscrew)*	1
12	Refer to: *Heating Element / Overheat Thermostats* E-13	
13	Heater Light	1
14	Thermometer Kit *(incl. items 15 thru 18)*	1
15	• Compression Nut	1
16	• Washer	1
17	• Rubber Sleeve	1
18	• Male Connector	1

Always Specify Model & Serial Number

MA671908i

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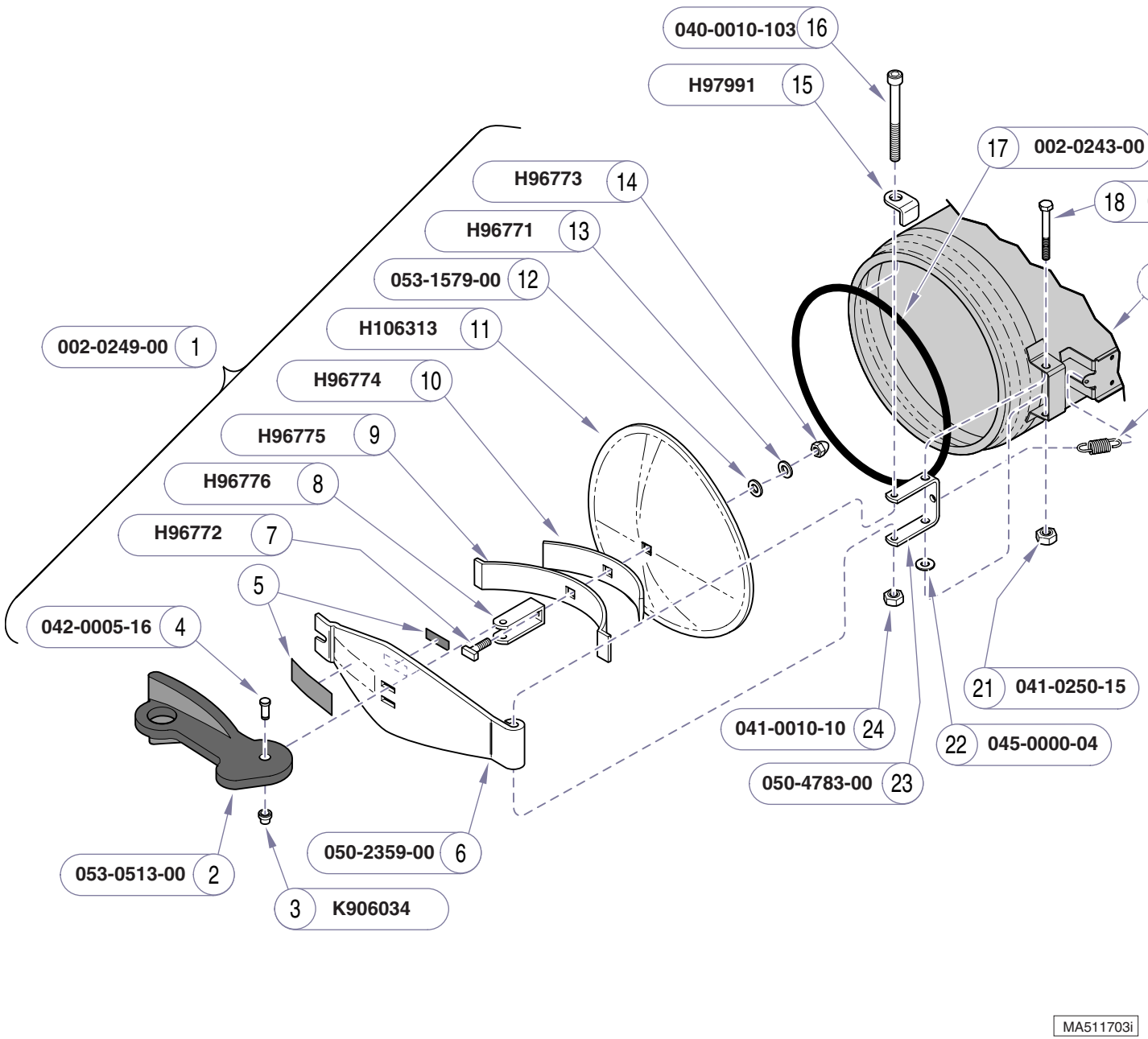
Refer To: **Page**

Operation & Troubleshooting A-1
Component Testing / Repair B-1
Access Procedures C-1
Wiring Diagrams D-1
Exploded Views / Part Numbers .. E-1



Item	Description	Qty.
1	Door Assembly *(incl. items 2 thru 13)*	1
2	• Handle	1
3	• Push Nut	1
4	• Pin	1
5	• Refer to *Label Location*	Ref
6	• Cross Arm	1
7	• T-bolt	1
8	• U-bracket	1
9	• Long Spring	1
10	• Short Spring	1
11	• Door	1
12	• Gasket	1
13	• Washer	1
14	• Cap Nut *(apply adhesive #042-0024-02)*	1
15	Door Stop	1
16	Bolt	1
17	Door Gasket	1
18	Bolt	1
19	Refer to *Chamber Components*	Ref
20	Spring	1
21	Torque Nut	1
22	Washer	1
23	Hinge	1
24	Torque Nut	1

Always Specify Model & Serial Number

Door Components

Models: ***ALL***
Serial Numbers:

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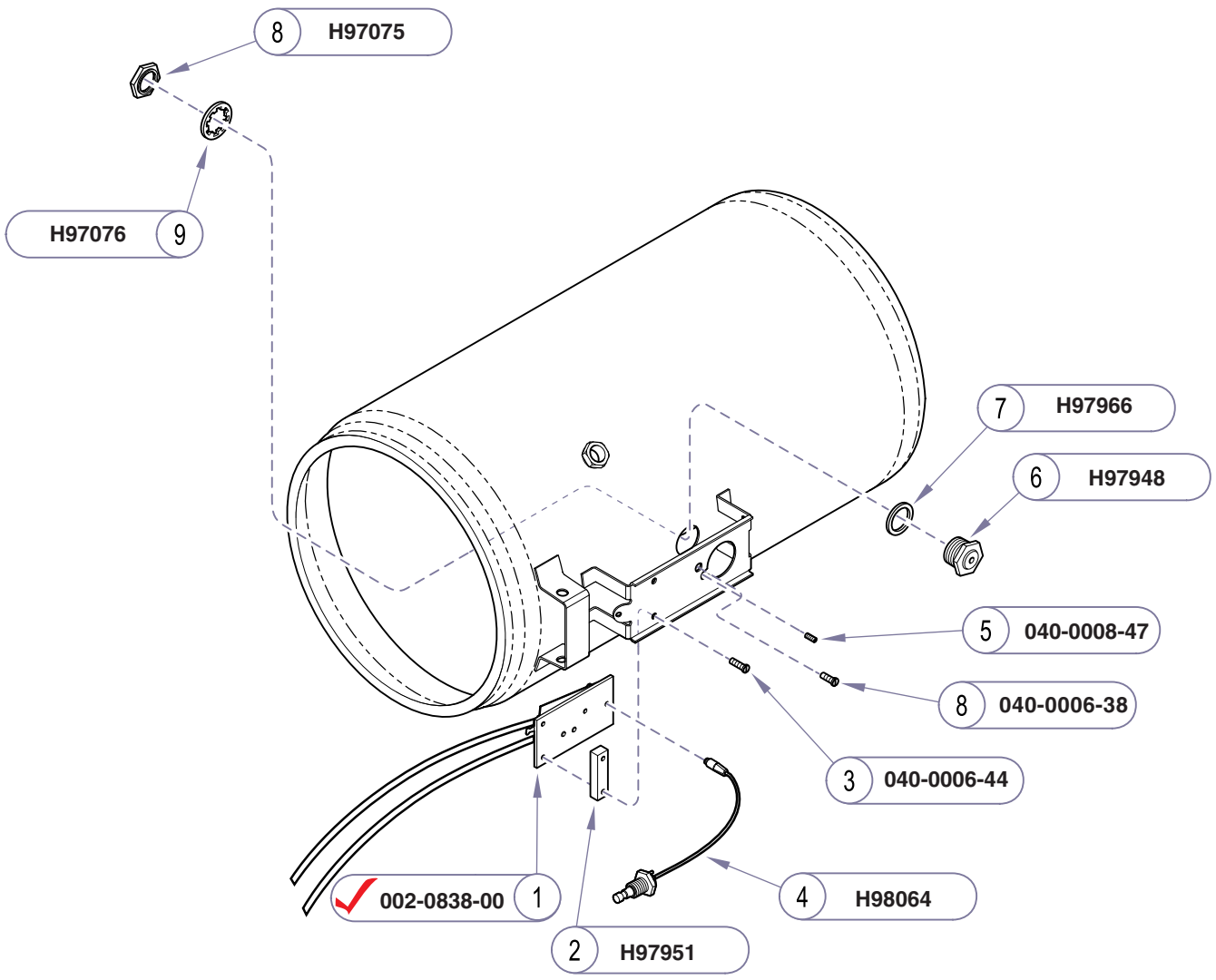
Refer To:	Page
Operation & Troubleshooting	A-1
Component Testing / Repair	B-1
Access Procedures	C-1
Wiring Diagrams	D-1
Exploded Views / Part Numbers	E-1



MA511902i

Item	Description	Qty.
1	Temperature Relay Kit *(incl. items 2 & 3)*	1
2	• Spacer	1
3	• Screw *(#6-32 x 7/16")*	3
4	Flexible Shaft Assembly	1
5	Set Screw	1
6	Diaphragm Cup	1
7	Gasket	1
8	Nut	1
9	Lockwasher	1

Always Specify Model & Serial Number

Models:	***ALL***			
Serial Numbers:				

Temperature Regulator Components

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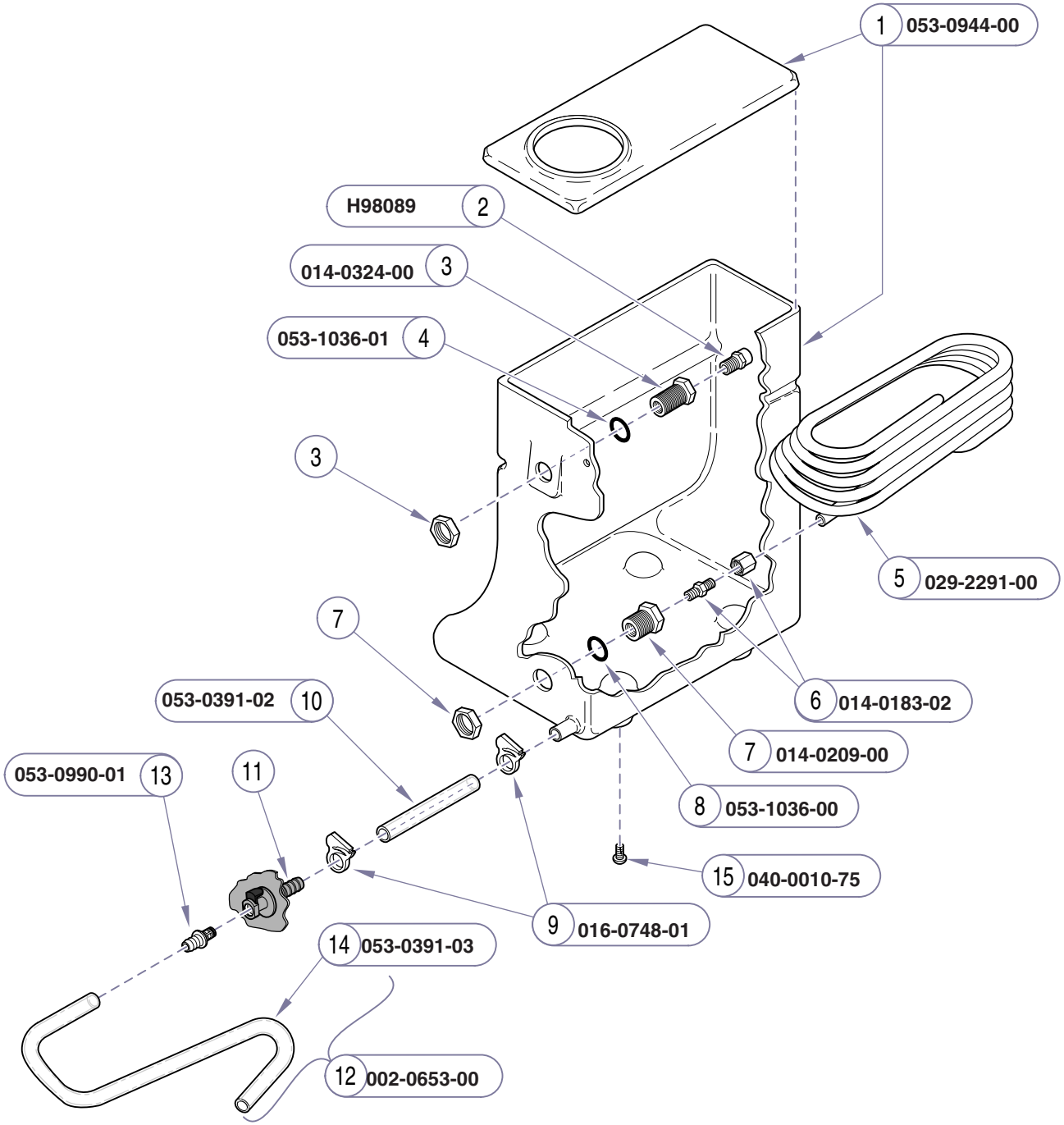

MA675105i

Refer To:	Page
Operation & Troubleshooting	A-1
Component Testing / Repair	B-1
Access Procedures	C-1
Wiring Diagrams	D-1
Exploded Views / Part Numbers	E-1

Item	Description	Qty.
1	Tank with Lid (not available separately)	1
2	Pressure Relief Valve	1
3	Bulkhead Fitting *(includes nut)*	1
4	Neoprene Washer	1
5	Condensing Coil Assy. *(incl. items 6 & 7)*	1
6	• Compression Fitting	1
7	• Bulkhead Fitting *(includes nut)*	1
8	Neoprene Washer	1
9	Hose Clamp	2
10	Tank Drain Tube	1
11	Refer to: *Front Panel Components*	Ref
12	Drain Hose Kit *(incl. items 13 thru 15)*	1
13	• Barbed Fitting	1
14	• Removeable Drain Tube	1
15	Screw	2

Always Specify Model & Serial Number

Reservoir

Models: *M7 (-011 thru -016)*
Serial Numbers: *all*

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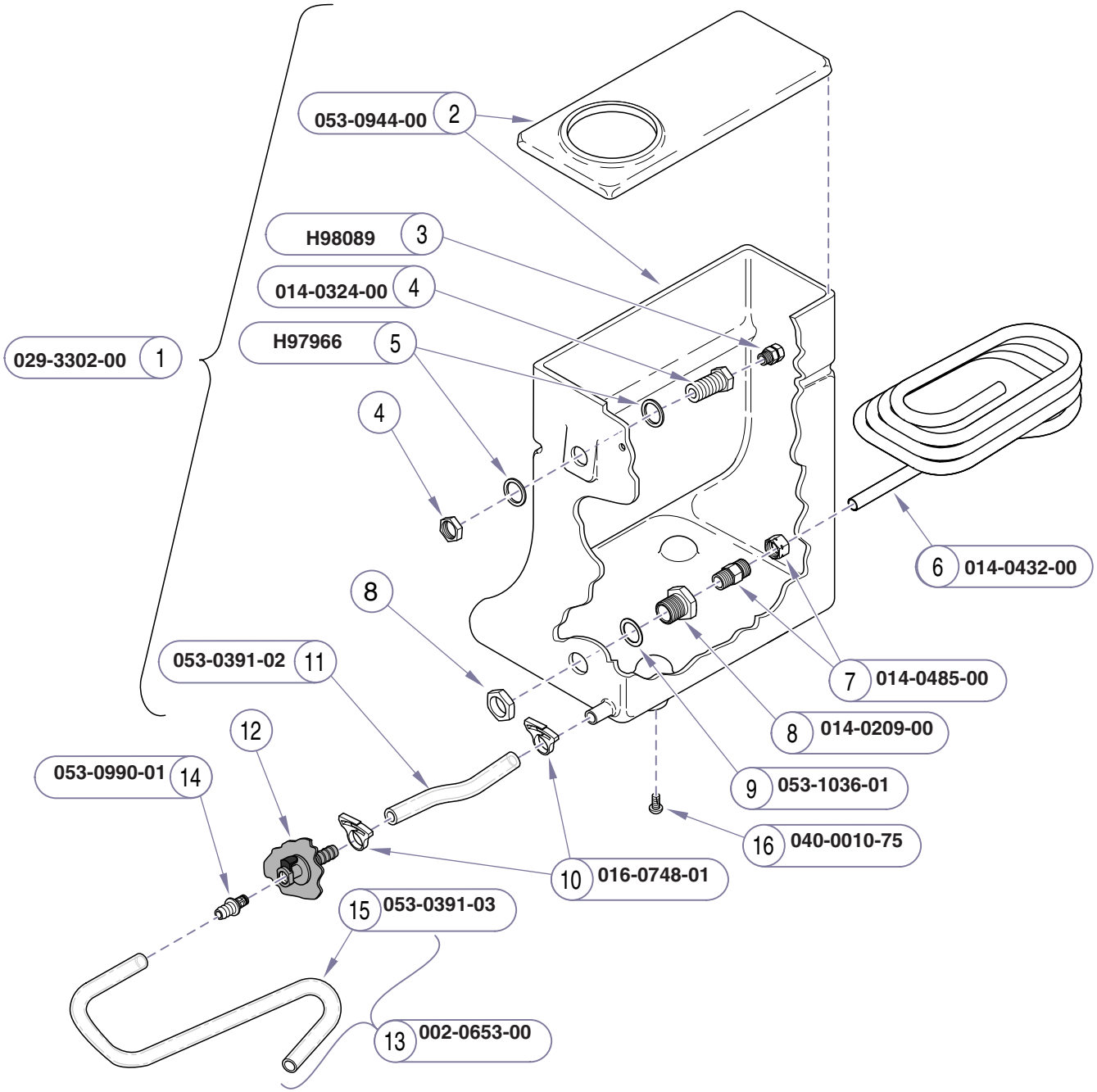
Refer To: **Page**

Operation & Troubleshooting A-1
Component Testing / Repair B-1
Access Procedures C-1
Wiring Diagrams D-1
Exploded Views / Part Numbers .. E-1



MA675106i

Item	Description	Qty.
1	Reservoir Assembly *(incl. items 2 thru 11)*	1
2	• Tank with Lid (not available separately)	1
3	• Pressure Relief Valve	1
4	• Bulkhead Fitting *(includes nut)*	1
5	• Washer	2
6	• Condensing Coil	1
7	• Compression Fitting	1
8	• Bulkhead Fitting *(includes nut)*	1
9	• Neoprene Washer	1
10	• Hose Clamp	2
11	• Tank Drain Tube	1
12	Refer to: *Front Panel Components*	Ref
13	Drain Hose Kit *(incl. items 13 thru 15)*	1
14	• Barbed Fitting	1
15	• Removeable Drain Tube	1
16	Screw	2

Always Specify Model & Serial Number

Models: *M7 (-020 thru -022)*
Serial Numbers: *all*

Reservoir

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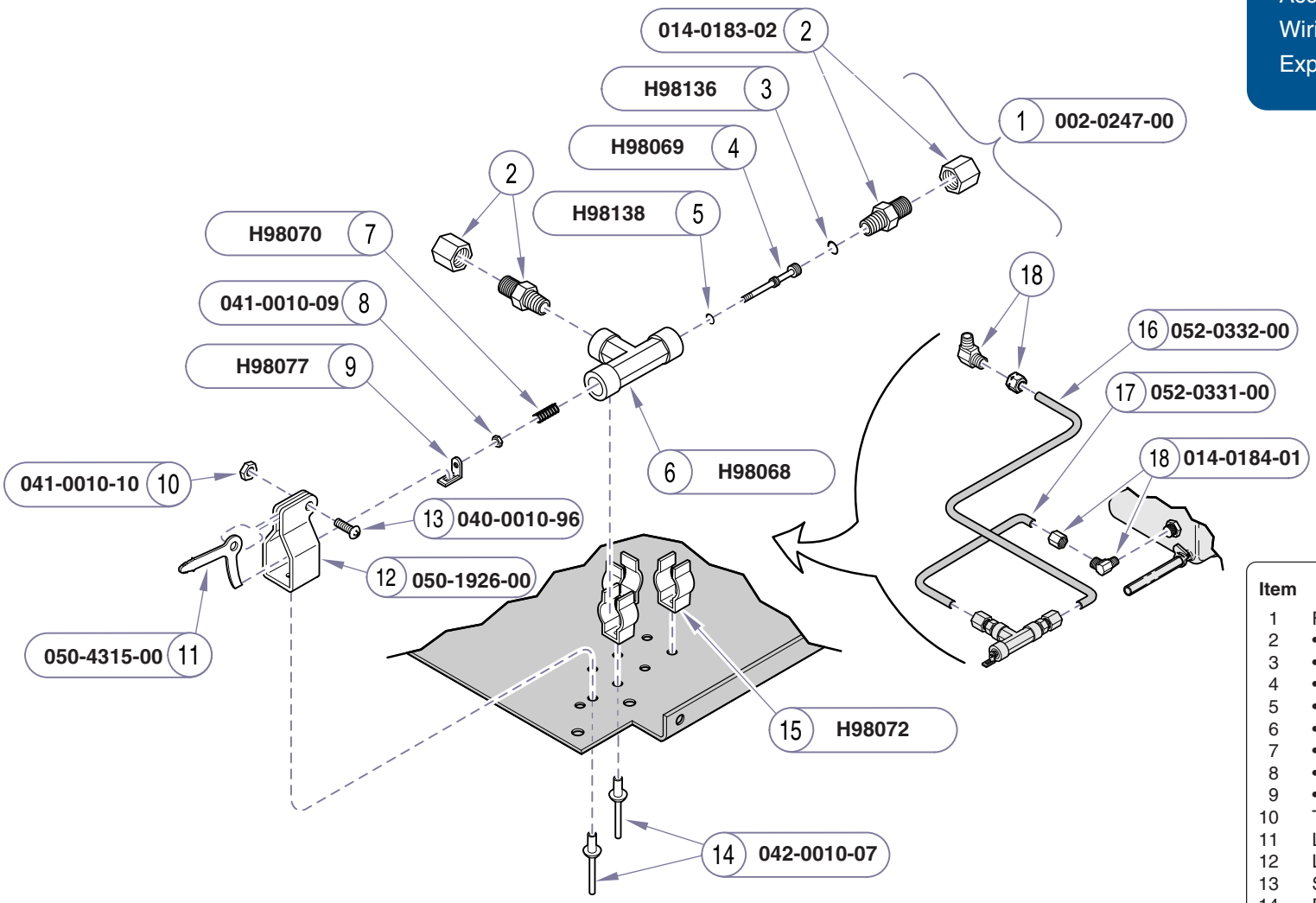
Refer To:	Page
Operation & Troubleshooting	A-1
Component Testing / Repair	B-1
Access Procedures	C-1
Wiring Diagrams	D-1
Exploded Views / Part Numbers	E-1



Item	Description	Qty.
1	Fill/Vent Valve Kit *(incl. items 2 thru 9)*	1
2	• Compression Fitting	2
3	• O-ring *(apply hi-temp lube)*	1
4	• Plunger	1
5	• O-ring *(apply hi-temp lube)*	1
6	• Valve Body	1
7	• Spring	1
8	• Nut *(#10-32, brass)*	1
9	• Bracket	1
10	Torque Nut	1
11	Lever	1
12	Lever Bracket	1
13	Screw *(#10-32 x 3/4")*	1
14	Pop Rivet	3
15	Clip	3
16	Tubing *(Fill)*	1
17	Tubing *(Vent)*	1
18	Elbow Fitting	2

Always Specify Model & Serial Number

MA674600i

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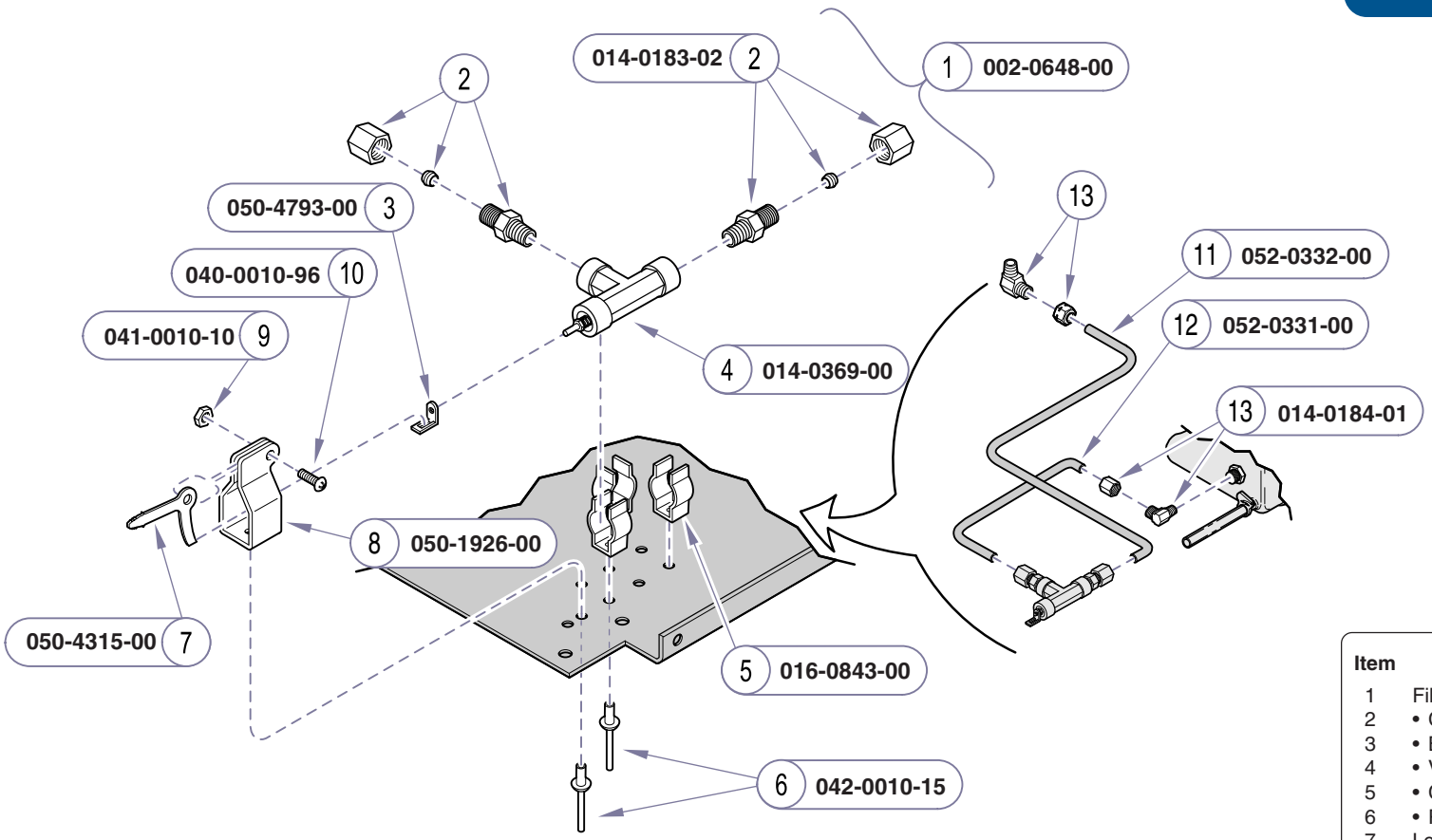
Refer To:	Page
Operation & Troubleshooting	A-1
Component Testing / Repair	B-1
Access Procedures	C-1
Wiring Diagrams	D-1
Exploded Views / Part Numbers	E-1



MA674601i

Item	Description	Qty.
1	Fill/Vent Valve Kit *(incl. items 2 thru 6)*	1
2	• Compression Fitting	2
3	• Bracket	1
4	• Valve Body	1
5	• Clip	3
6	• Pop Rivet	3
7	Lever	1
8	Lever Bracket	1
9	Torque Nut	1
10	Screw *(#10-32 x 3/4")*	1
11	Tubing *(Fill)*	1
12	Tubing *(Vent)*	1
13	Elbow Fitting	2

Always Specify Model & Serial Number

Models:	*M7 (-011)*	*M7 (-012)*	*M7 (-014)*
Serial Numbers:	*MH1803 thru MH3104*	*MJ1092 thru MJ1241*	*ML2132 thru ML4209*

Fill / Vent Valve & Plumbing

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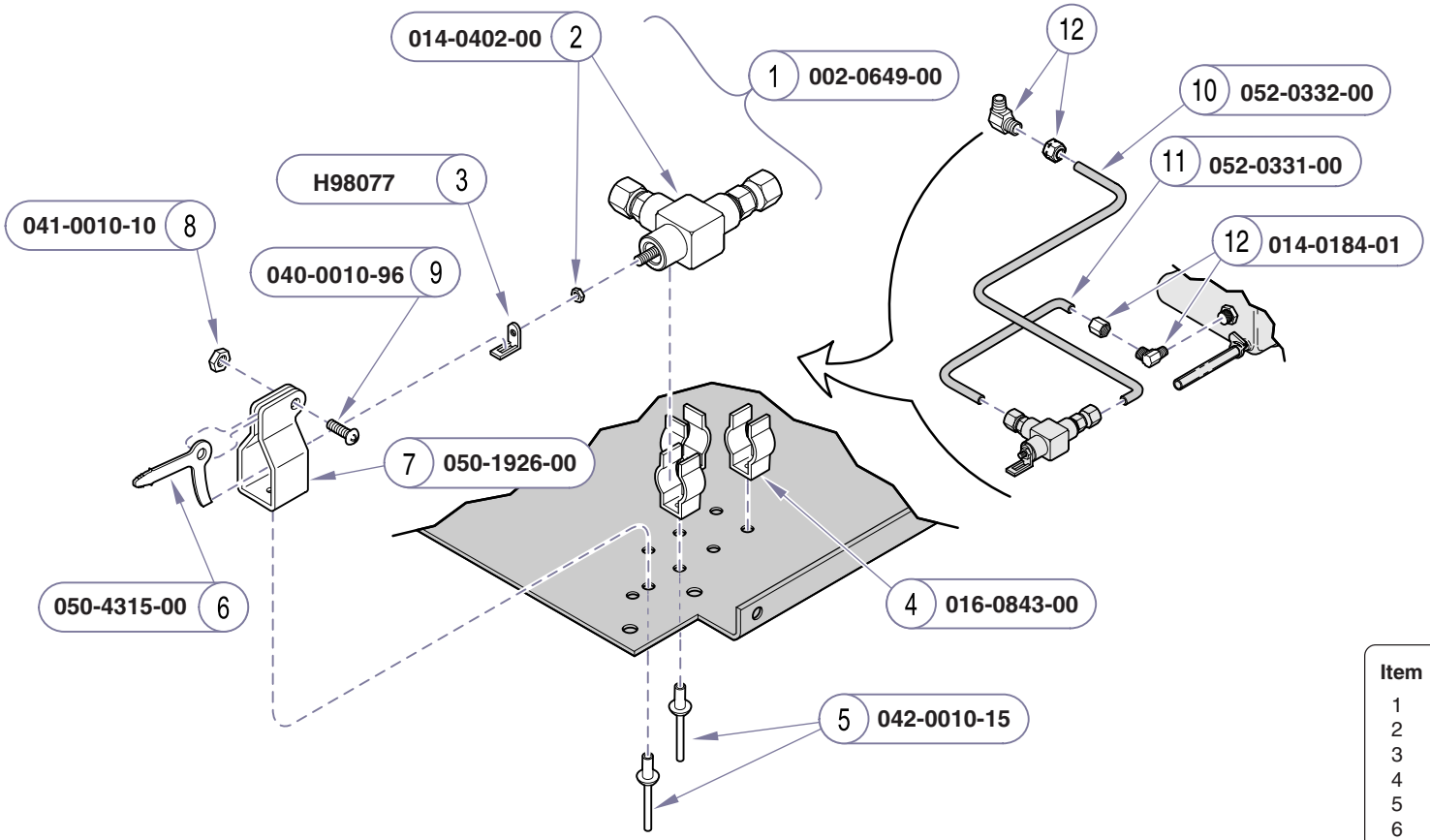
Refer To:	Page
Operation & Troubleshooting	A-1
Component Testing / Repair	B-1
Access Procedures	C-1
Wiring Diagrams	D-1
Exploded Views / Part Numbers ..	E-1



Item	Description	Qty.
1	Fill/Vent Valve Kit *(incl. items 2 thru 5)*	1
2	• Valve Body *(includes nut)*	1
3	• Bracket	1
4	• Clip	3
5	• Pop Rivet	3
6	Lever	1
7	Lever Bracket	1
8	Torque Nut	1
9	Screw *(#10-32 x 3/4")*	1
10	Tubing *(Fill)*	1
11	Tubing *(Vent)*	1
12	Elbow Fitting	2

Always Specify Model & Serial Number

MA674602i

Fill / Vent Valve & Plumbing

Models: *Serial Numbers:*	***M7 (-011)*** *MH3105 thru present V2200 thru present*	***M7 (-012)*** *MJ1242 thru present V2200 thru present*	***M7 (-014)*** *ML4210 thru present V2200 thru present*	***M7 (-013/-015 /-016)*** *all*

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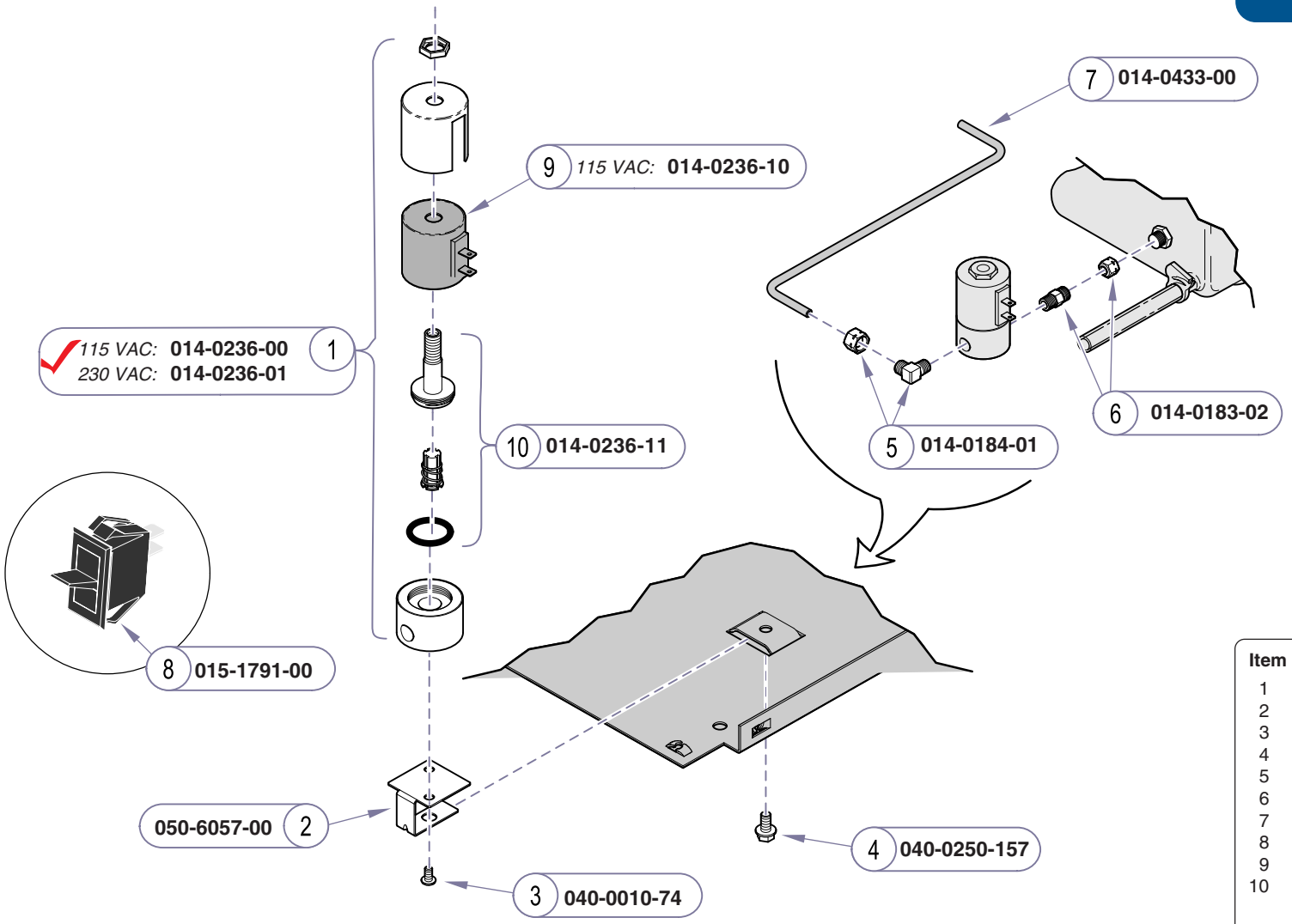
Refer To: **Page**

Operation & Troubleshooting A-1
Component Testing / Repair B-1
Access Procedures C-1
Wiring Diagrams D-1
Exploded Views / Part Numbers .. E-1



MA674605i

Item	Description	Qty.
1	Fill/Vent Valve	1
2	Mounting Bracket	1
3	Screw *(#10-32 x 3/8")*	2
4	Bolt *(1/4-20 x 1/2")*	2
5	Elbow Fitting	1
6	Male Fitting *(3/8")*	1
7	Tubing	1
8	Fill / Vent Switch	1
9	Replacement Coil	1
10	Replacement Kit *(Includes plunger, guide, and seals)*	1

Always Specify Model & Serial Number

Models:	***M7 (-020 thru -022)***			
Serial Numbers:	***all***			

Fill / Vent Valve & Plumbing

E-9.3

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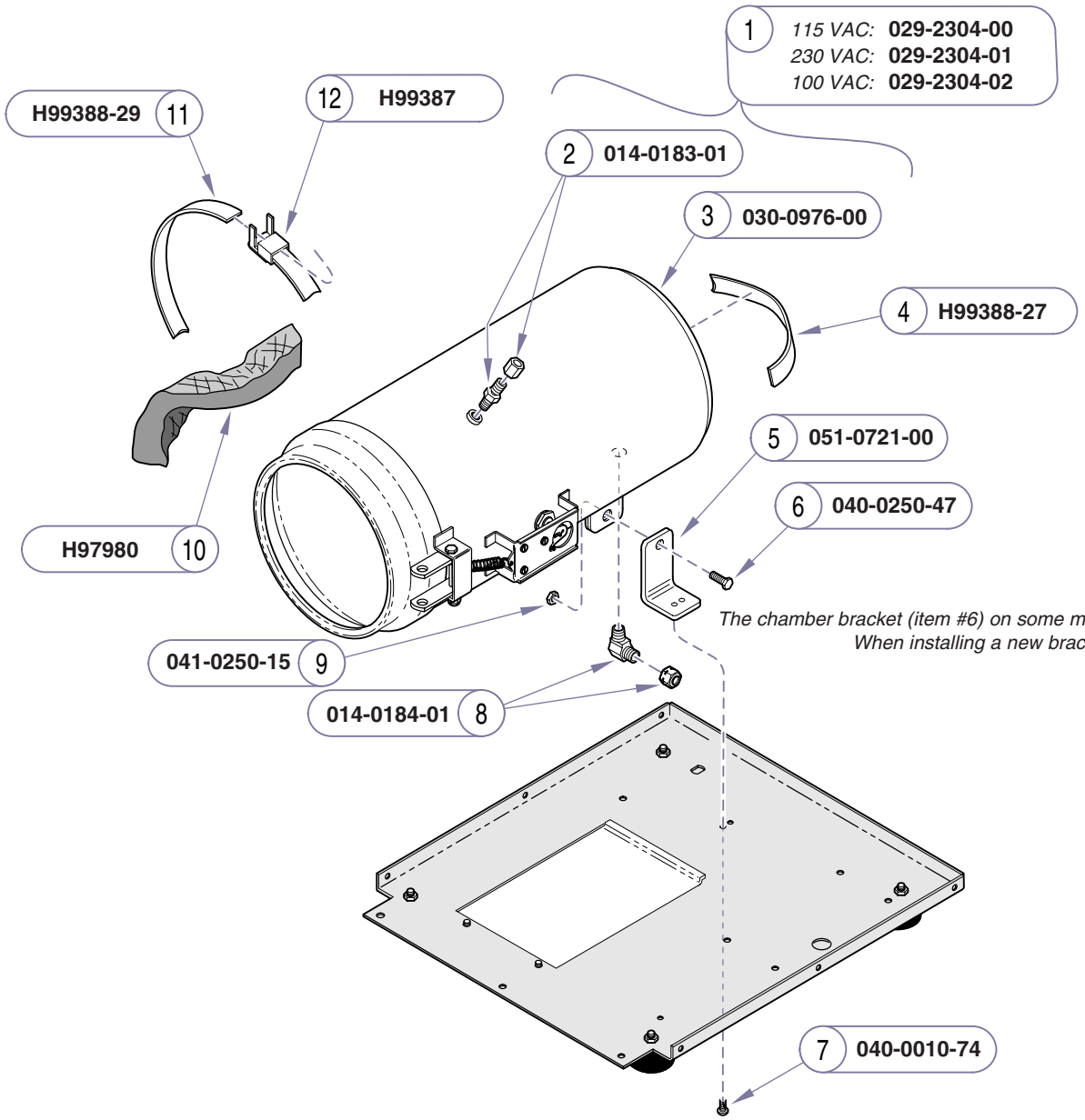
Refer To: **Page**

Operation & Troubleshooting A-1
Component Testing / Repair B-1
Access Procedures C-1
Wiring Diagrams D-1
Exploded Views / Part Numbers .. E-1



The chamber bracket (item #6) on some models may be attached to the base plate w/ pop rivets. When installing a new bracket, replace rivets w/ screws (item #7).

MA676600i

Item	Description	Qty.
1	Chamber Assembly - ***complete***	
	includes items 2 & 3 and the following:	1
	• Heating Element & Thermostats (2)	
	• Temperature Regulator Assembly	
	• Door Hinge & Door Gasket	
2	• Compression Fitting	1
3	• Chamber Shell ***only***	2
4	Banding Strap *(end)*	1
5	Chamber Bracket	1
6	Screw	1
7	Screw	2
8	Elbow Fitting	1
9	Nut	1
10	Insulation	1
11	Banding Strap	2
12	Banding Clip	2

Always Specify Model & Serial Number

Chamber Components

Models: *M7 (-011 thru -016)*
Serial Numbers: *all*

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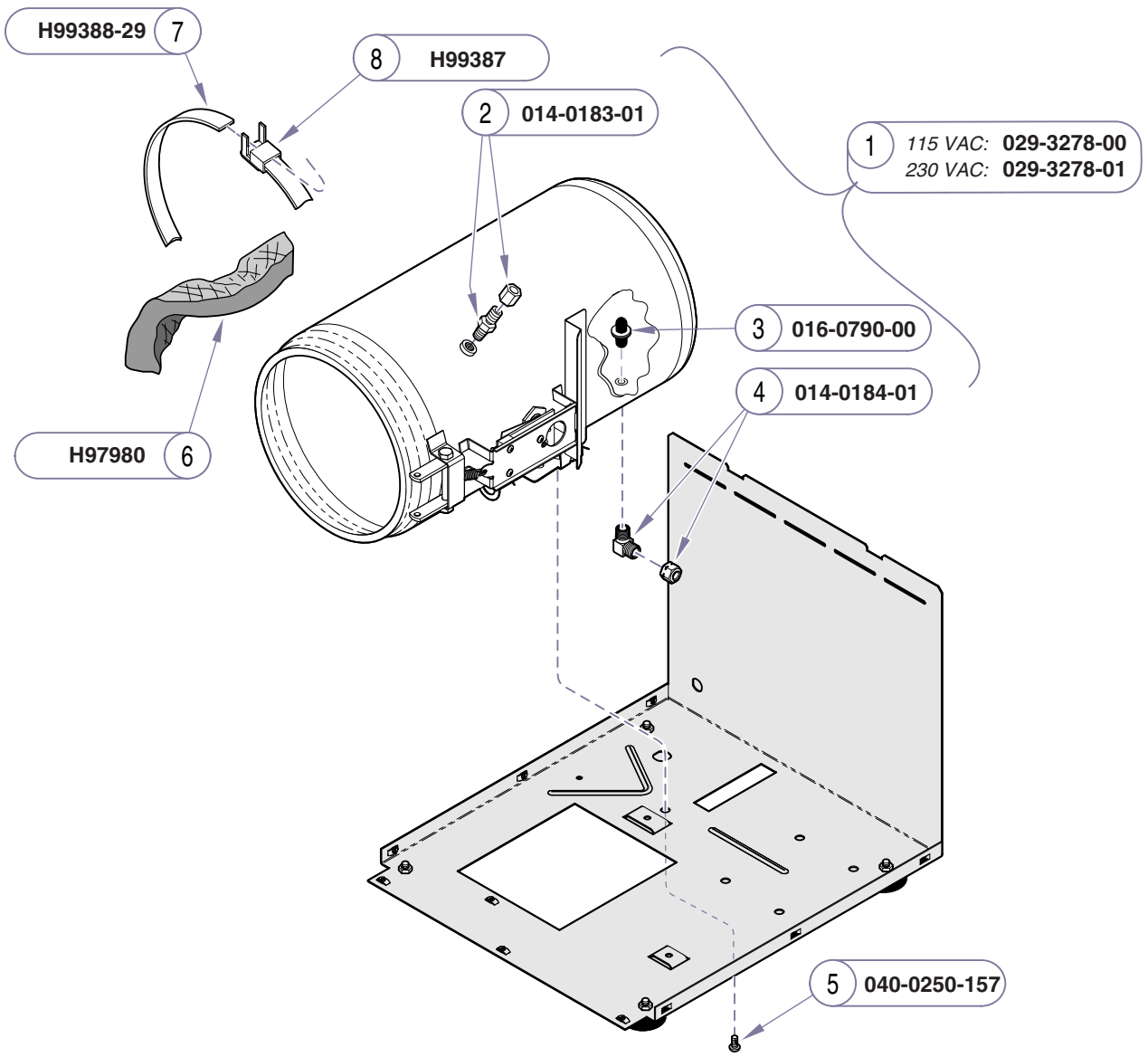
Refer To: **Page**

Operation & Troubleshooting A-1
Component Testing / Repair B-1
Access Procedures C-1
Wiring Diagrams D-1
Exploded Views / Part Numbers .. E-1



MA676601i

Item	Description	Qty.
1	Chamber Assembly - ***complete***	
	includes items 2 thru 4 & the following:	1
	• Heating Element & Thermostats (2)	
	• Temperature Regulator Assembly	
	• Door Hinge & Door Gasket	
	• Timer Buzzer	
2	• Compression Fitting	1
3	• Filter Screen	1
4	• Elbow Fitting	1
5	Screw	1
6	Insulation	1
7	Banding Strap	2
8	Banding Clip	2

Always Specify Model & Serial Number

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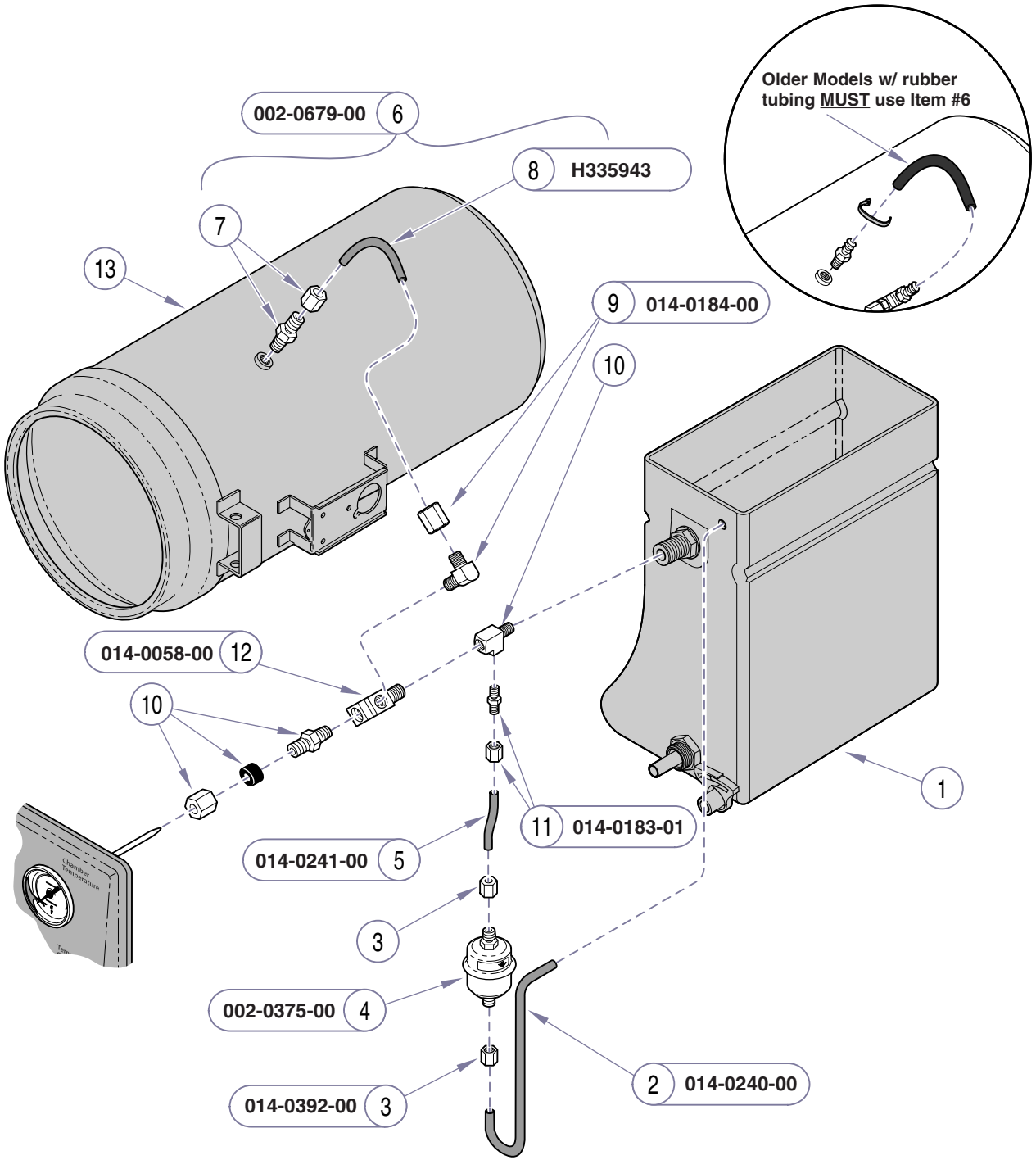

Refer To:	Page
Operation & Troubleshooting	A-1
Component Testing / Repair	B-1
Access Procedures	C-1
Wiring Diagrams	D-1
Exploded Views / Part Numbers	E-1

Item	Description	Qty.
1	Refer to: *Reservoir*	Ref
2	Tube	1
3	Compression Nut	2
4	Bellows	1
5	Tube	1
6	Chamber Manifold Tube Kit *(includes items 7 thru 9)*	
7	• Refer to: *Chamber Assembly*	Ref
8	• Tube	1
9	• Elbow Fitting	1
10	Refer to: *Front Panel Components*	Ref
11	Compression Fitting	1
12	Street Tee Fitting	2
13	Refer to: *Chamber Assembly*	Ref

Always Specify Model & Serial Number

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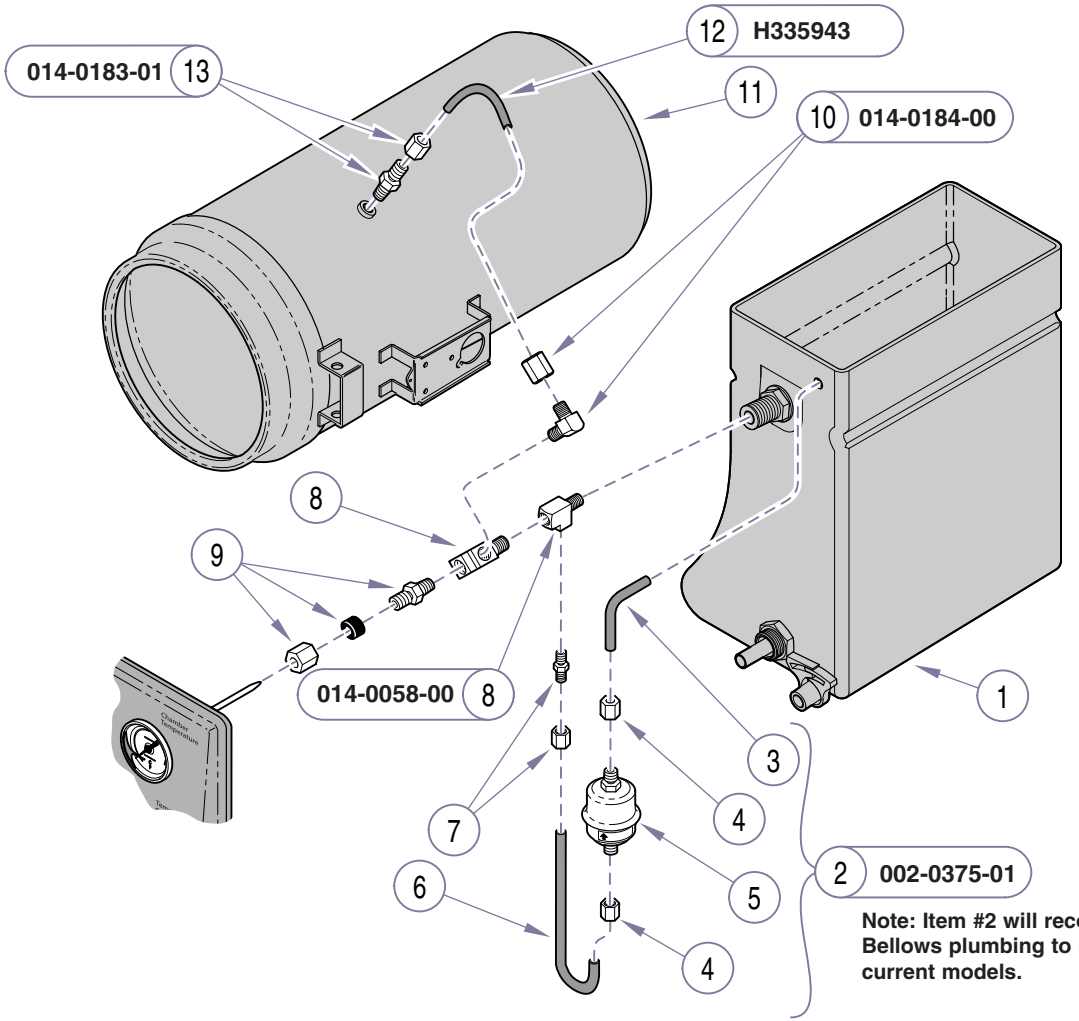
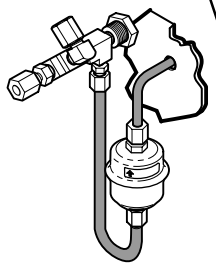
Refer To:	Page
Operation & Troubleshooting	A-1
Component Testing / Repair	B-1
Access Procedures	C-1
Wiring Diagrams	D-1
Exploded Views / Part Numbers	E-1

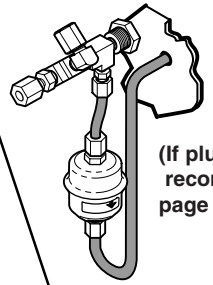


Note: Item #2 will reconfigure Bellows plumbing to match current models.

Original Plumbing Configuration



Reconfigured Plumbing Configuration



(If plumbing has been reconfigured, refer to next page for replacement parts)

MA675601i

Item	Description	Qty.
1	Refer to: *Reservoir*	Ref
2	Bellows Kit *(includes items 3 thru 7)*	1
3	Tube	1
4	Compression Nut	3
5	Bellows	1
6	Tube	1
7	Compression Fitting	1
8	Street Tee Fitting	2
9	Refer to: *Front Panel Components*	Ref
10	Elbow Fitting	1
11	Refer to: *Chamber Assembly*	Ref
12	Tube	1
13	Compression Fitting	1

Always Specify Model & Serial Number

Models: / ***Serial Numbers:***	***M7 (-011)***	***M7 (-012)***	***M7 (-014)***	***M7 (-013/-015 /-016)***
	MH6045 thru present	***MJ1697 thru present***	***ML7298 thru present***	***all***
	V2200 thru present	***V2200 thru present***	***V2200 thru present***	

Bellows & Plumbing

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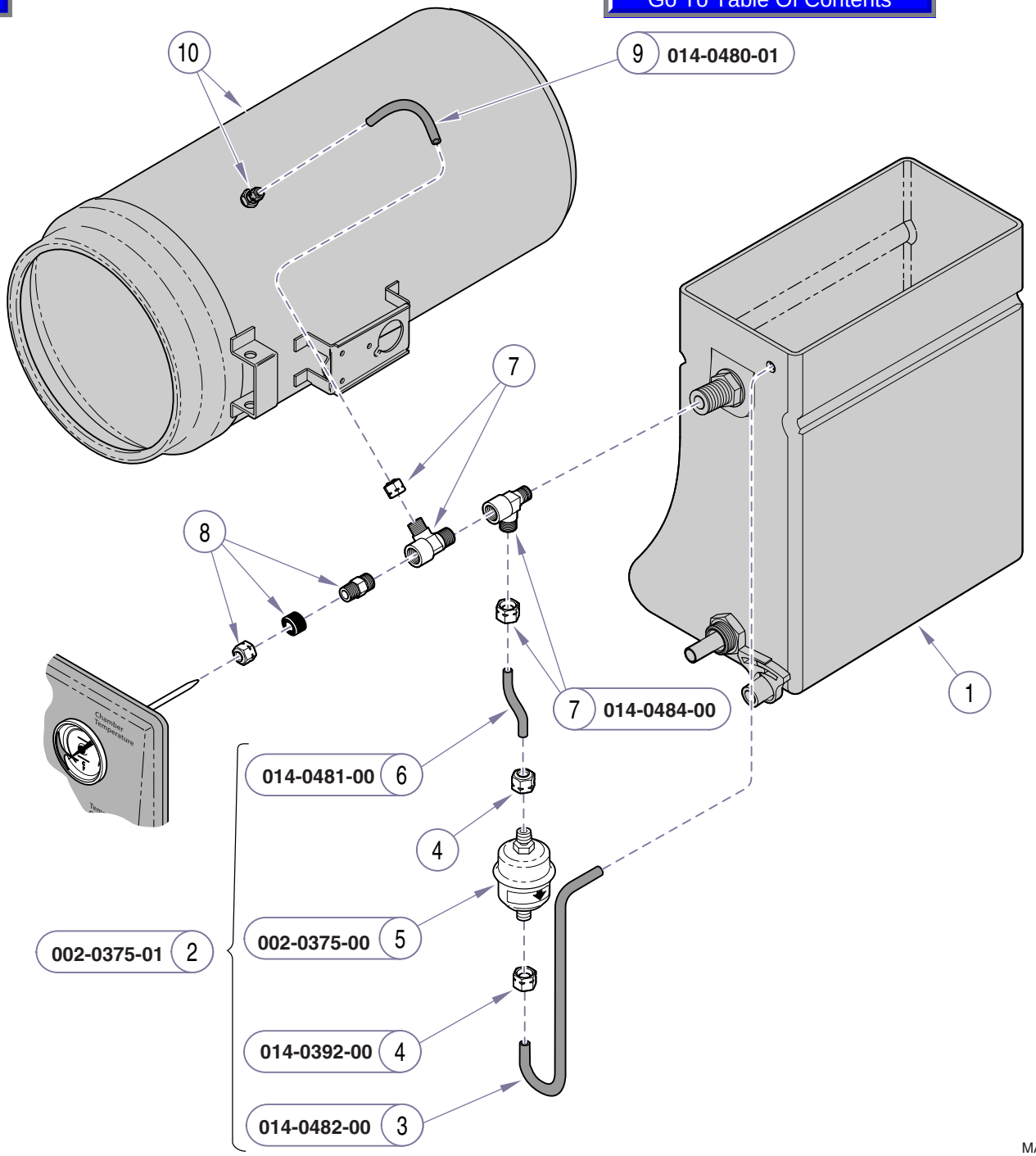

Refer To:	Page
Operation & Troubleshooting	A-1
Component Testing / Repair	B-1
Access Procedures	C-1
Wiring Diagrams	D-1
Exploded Views / Part Numbers	E-1

Item	Description	Qty.
1	Refer to: *Reservoir*	Ref
2	Bellows Kit	1
3	• Tube	1
4	• Compression Nut	2
5	• Bellows	1
6	• Tube	1
7	• Compression Fitting	2
8	Refer to: *Front Panel Components*	Ref
9	Tube	1
10	Refer to: *Chamber Components*	Ref

Always Specify Model & Serial Number

Models: *M7 (-020 thru -022)*
Serial Numbers: *all*

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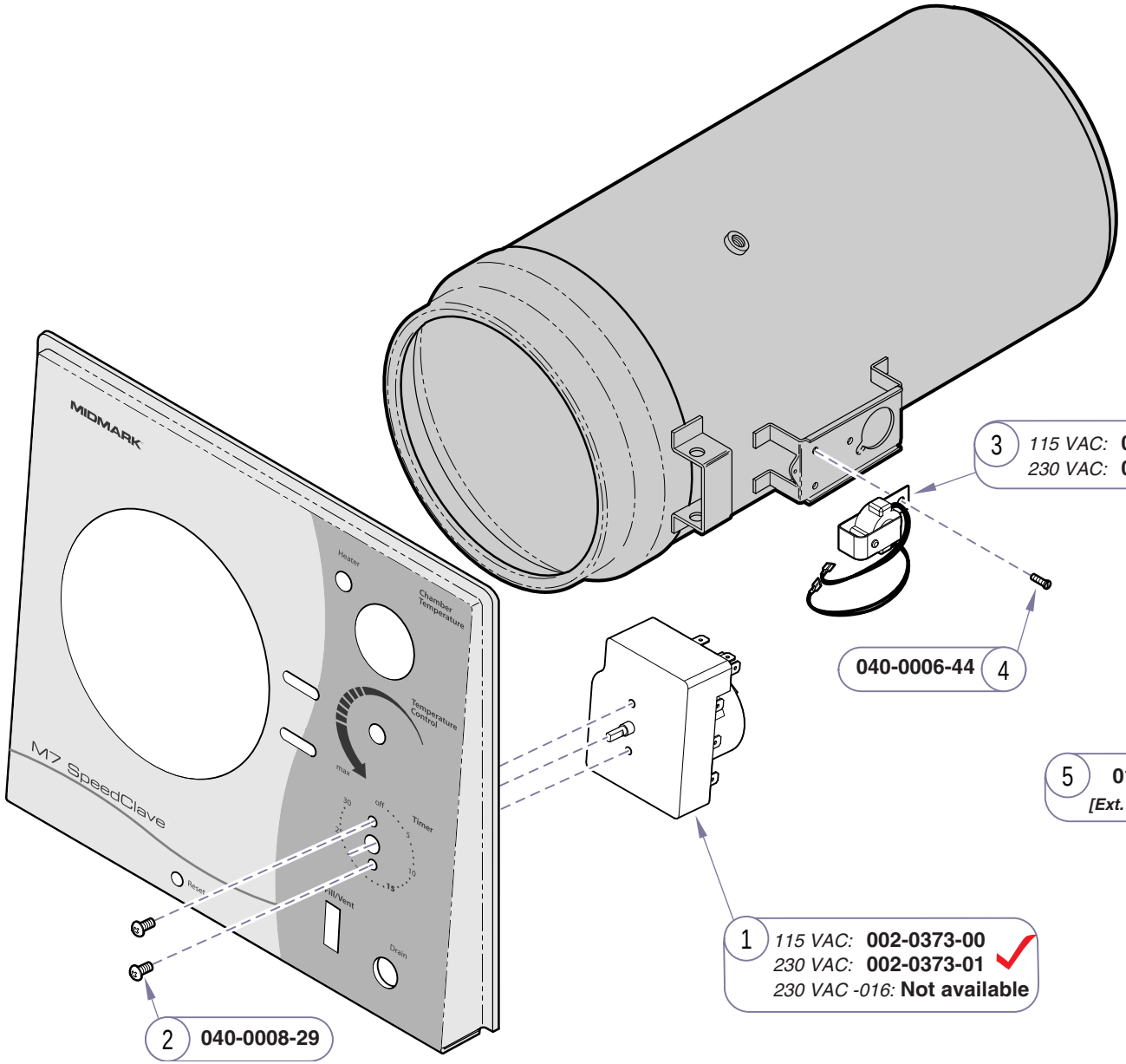
Refer To: **Page**

Operation & Troubleshooting A-1
Component Testing / Repair B-1
Access Procedures C-1
Wiring Diagrams D-1
Exploded Views / Part Numbers .. E-1



MA671802i

Item	Description	Qty.
1	Timer Assembly Kit *(incl. items 2 thru 5)*	1
2	• Screw *(#8-32 x 5/16")*	1
3	• Buzzer	1
4	• Screw *(#6-32 x 7/16")*	1
5	• Extended Wiring Harness - *not shown (required for older units only)*	1

Always Specify Model & Serial Number

Models: / ***Serial Numbers:***	***M7 (-011 thru -015)*** ***all***	***M7 (-020 thru -022)*** ***all***		

Timer / Buzzer

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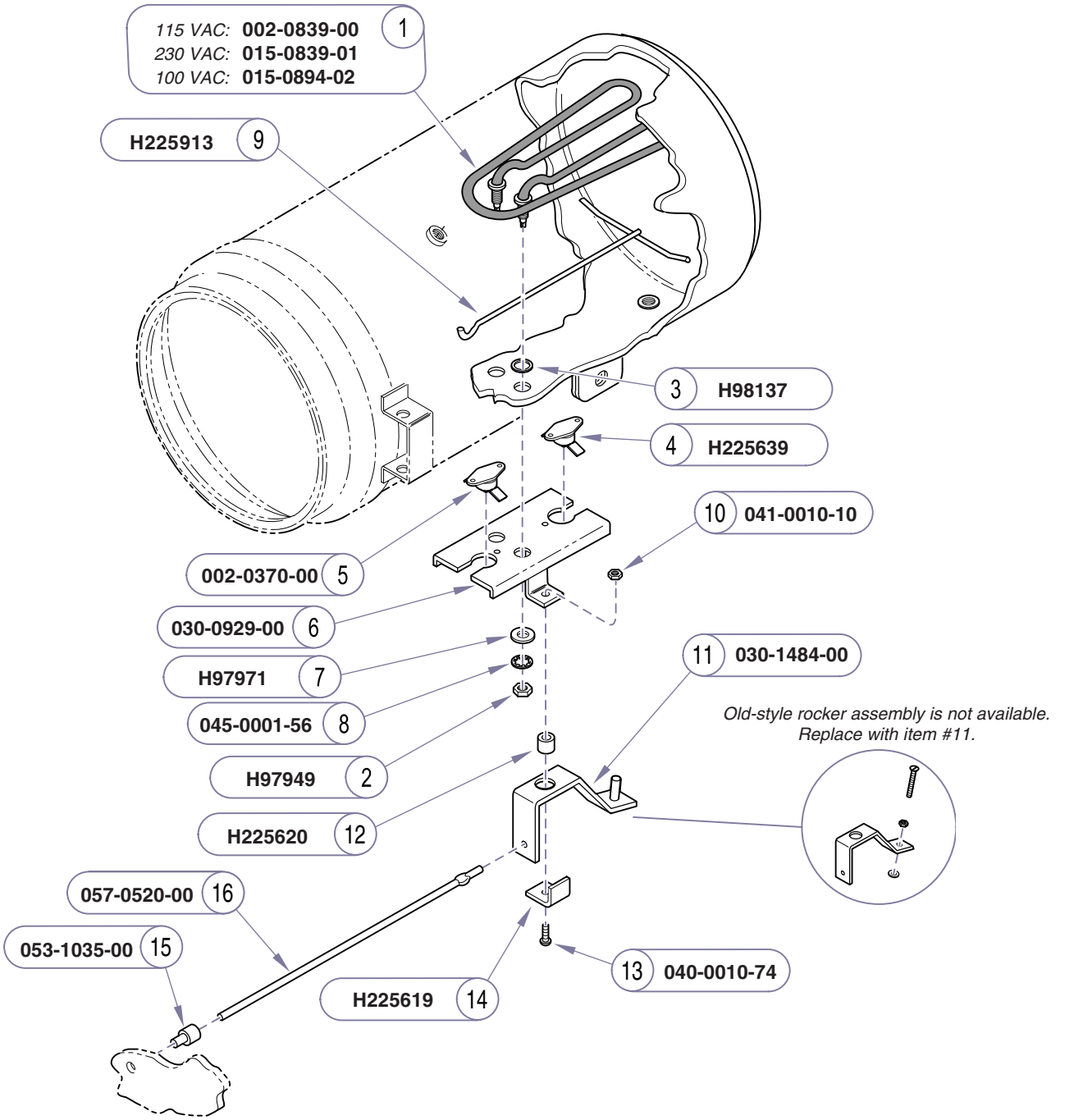

MA673901i

Refer To:	Page
Operation & Troubleshooting	A-1
Component Testing / Repair	B-1
Access Procedures	C-1
Wiring Diagrams	D-1
Exploded Views / Part Numbers	E-1

Item	Description	Qty.
1	Heating Element *(includes items 2 & 3)*	1
2	• Nut	2
3	• Gasket	2
4	Overheat Thermostat *(manual-reset)*	1
5	Overheat Thermostat *(auto-reset)*	1
6	Bracket	1
7	Washer	2
8	Lockwasher	2
9	Heater Spacer	1
10	Nut	1
11	Rocker Assembly	1
12	Spacer	1
13	Screw	1
14	Bracket	1
15	Reset Button	1
16	Reset Rod	1

Always Specify Model & Serial Number

Heating Element & Thermostats

Models: *M7 (-011 thru -016)*
Serial Numbers: *all*

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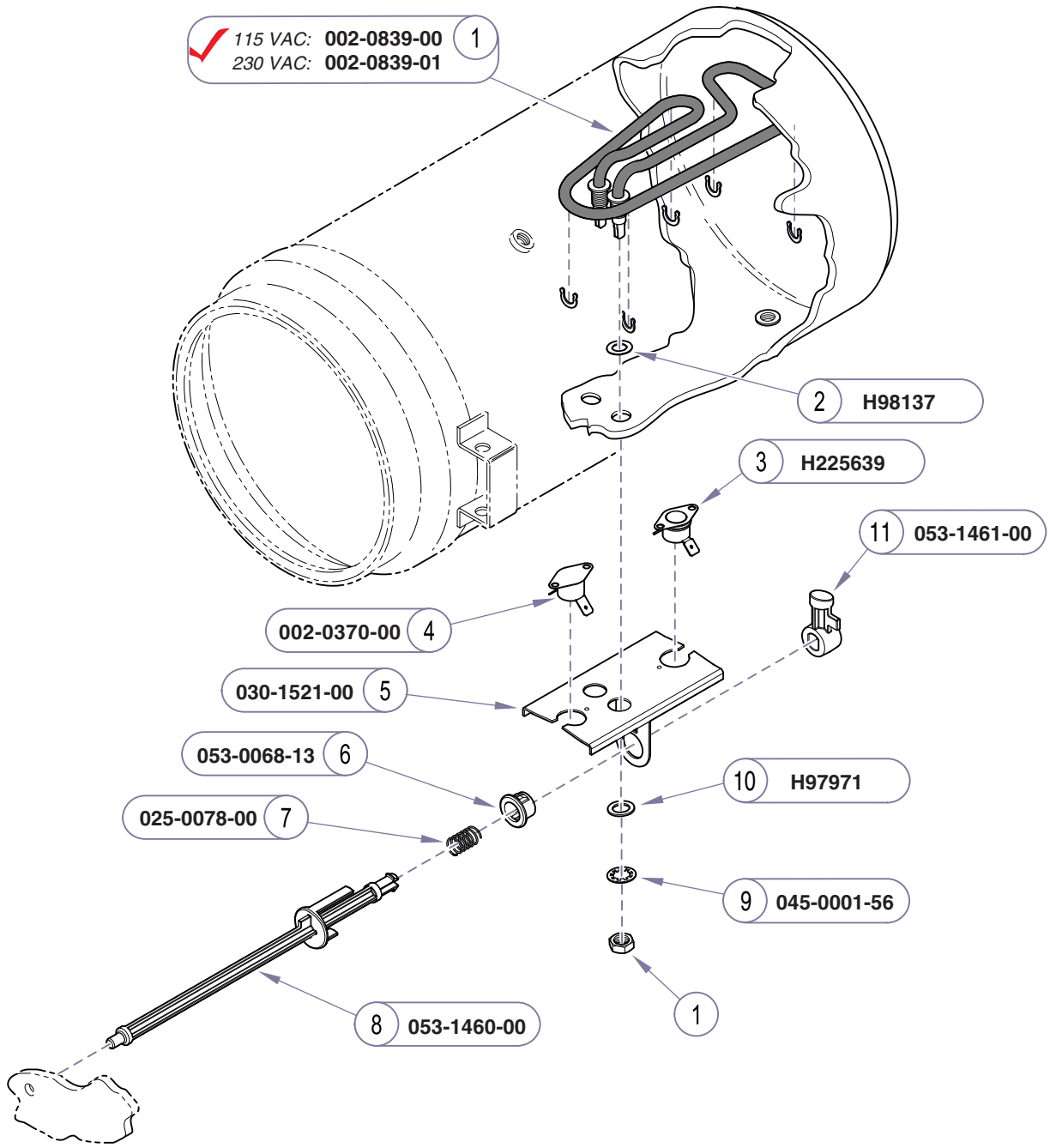
Refer To: **Page**

Operation & Troubleshooting A-1
Component Testing / Repair B-1
Access Procedures C-1
Wiring Diagrams D-1
Exploded Views / Part Numbers .. E-1



MA673903i

Item	Description	Qty.
1	Heating Element Kit *(includes nuts, e-clips & item 2)*	1
2	• Gasket	2
3	Overheat Thermostat *(manual-reset)*	1
4	Overheat Thermostat *(auto-reset)*	1
5	Bracket	1
6	Bushing	1
7	Spring	1
8	Reset Rod	1
9	Lockwasher	2
10	Washer	2
11	Reset Button Actuator	1

Always Specify Model & Serial Number

Models:	***M7 (-020 thru -022)***			
Serial Numbers:	***all***			

Heating Element & Thermostats

E-13.1

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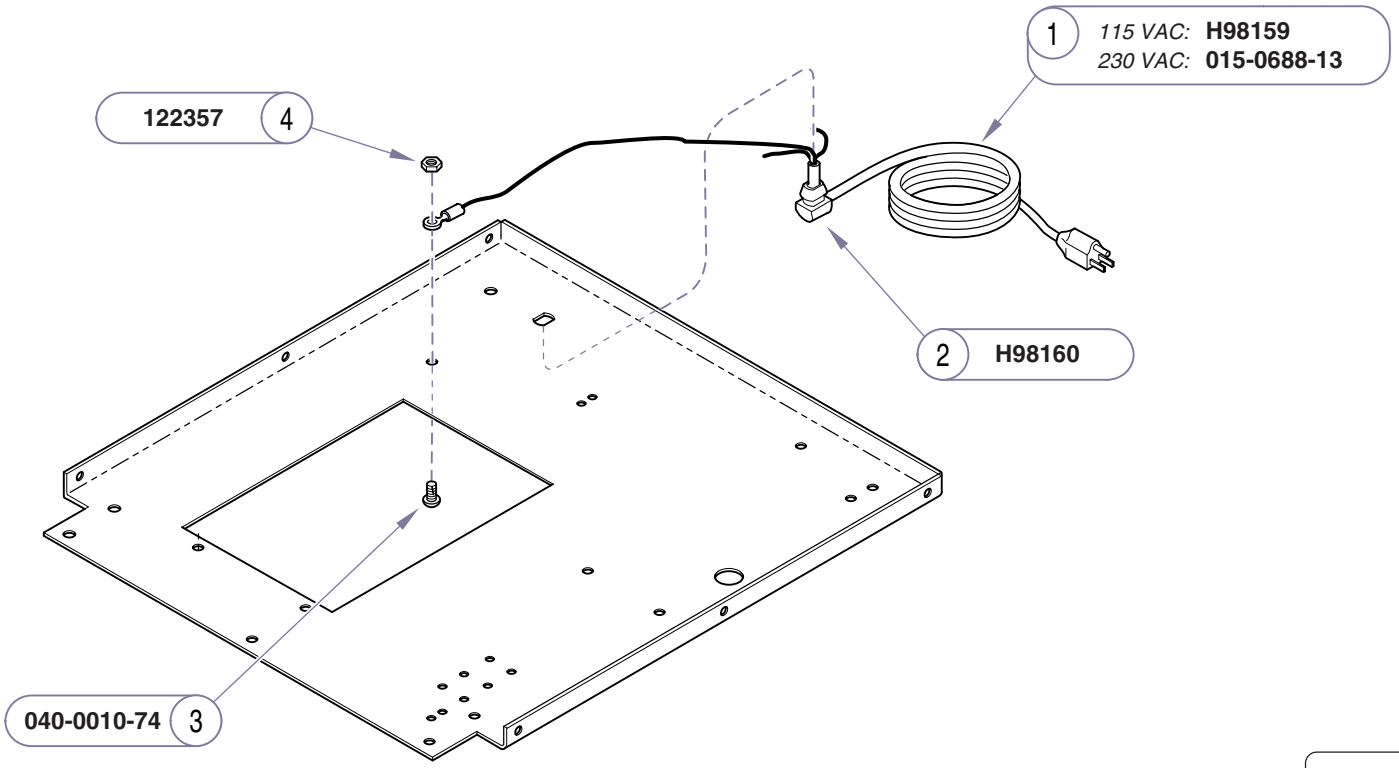
Refer To:	Page
Operation & Troubleshooting	A-1
Component Testing / Repair	B-1
Access Procedures	C-1
Wiring Diagrams	D-1
Exploded Views / Part Numbers ..	E-1

Attention

These models do not have a fuse.



MA677200i

Item	Description	Qty.
1	Power Cord	1
2	Strain Relief	1
3	Screw *(#10-32 x 3/8")*	1
4	Keps Nut	1

Always Specify Model & Serial Number

Power Cord

Models: *M7 (-011 thru -016)*
Serial Numbers: *all*

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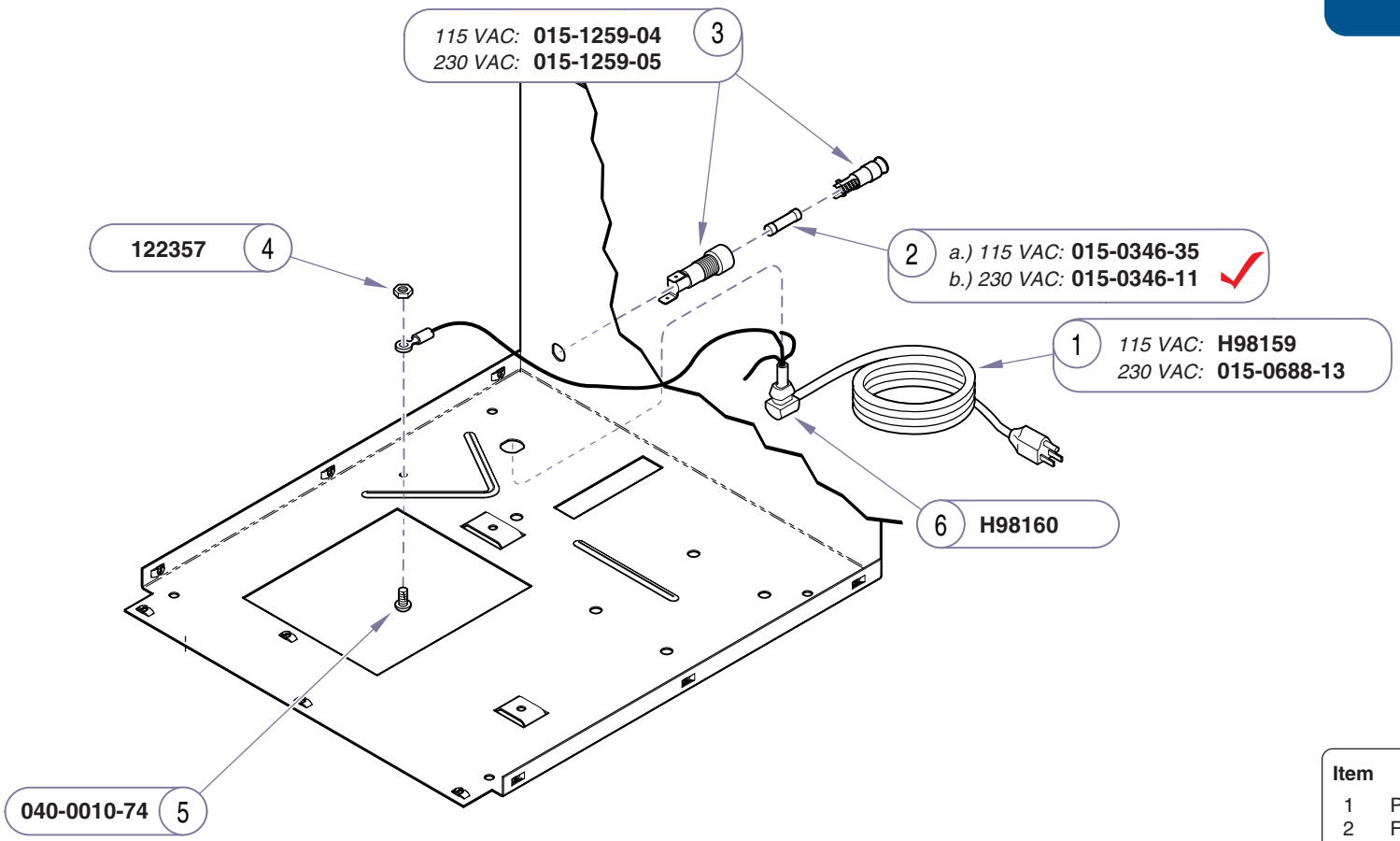
Refer To: **Page**

Operation & Troubleshooting A-1
Component Testing / Repair B-1
Access Procedures C-1
Wiring Diagrams D-1
Exploded Views / Part Numbers .. E-1



Item	Description	Qty.
1	Power Cord	1
2	Fuse:	
	a) 12A, 250V, Fast-Acting, 1/4" x 1-1/4"	1
	b) 8A, 250V, Fast-Acting, 5mm x 20mm	1
3	Fuse Holder	1
4	Screw *(#10-32 x 3/8")*	1
5	Keps Nut	1
6	Strain Relief	1

Always Specify Model & Serial Number

MA677201i

Models: *M7 (-020 thru -022)*
Serial Numbers: *all*

Power Cord / Fuse

E-14.1

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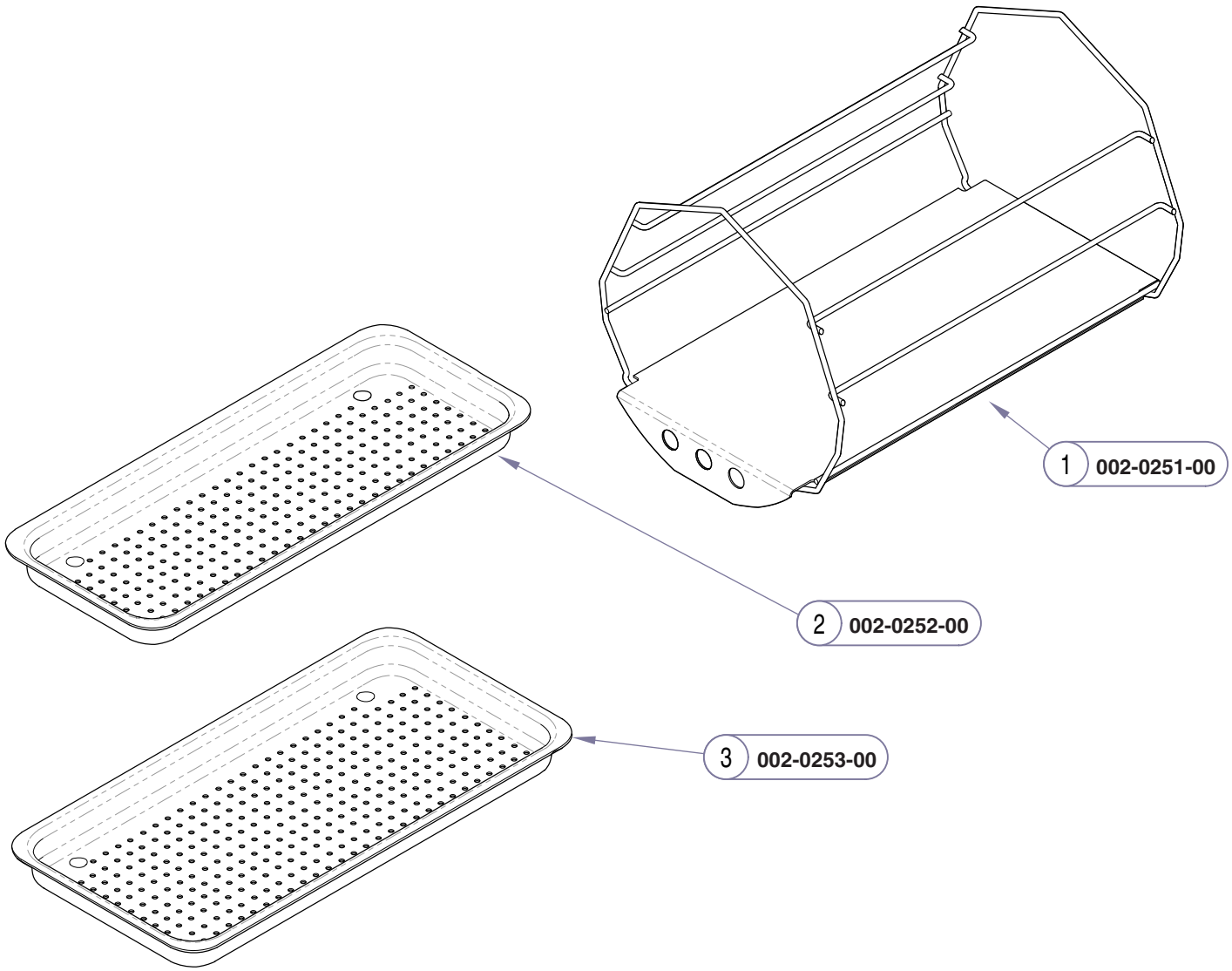
Refer To:	Page
Operation & Troubleshooting	A-1
Component Testing / Repair	B-1
Access Procedures	C-1
Wiring Diagrams	D-1
Exploded Views / Part Numbers	E-1



SA102200i

Item	Description	Qty.
1	Tray Rack	1
2	4 inch Tray	1
3	5 inch Tray	2

Always Specify Model & Serial Number

Rack & Trays

Models: ***ALL***
Serial Numbers:

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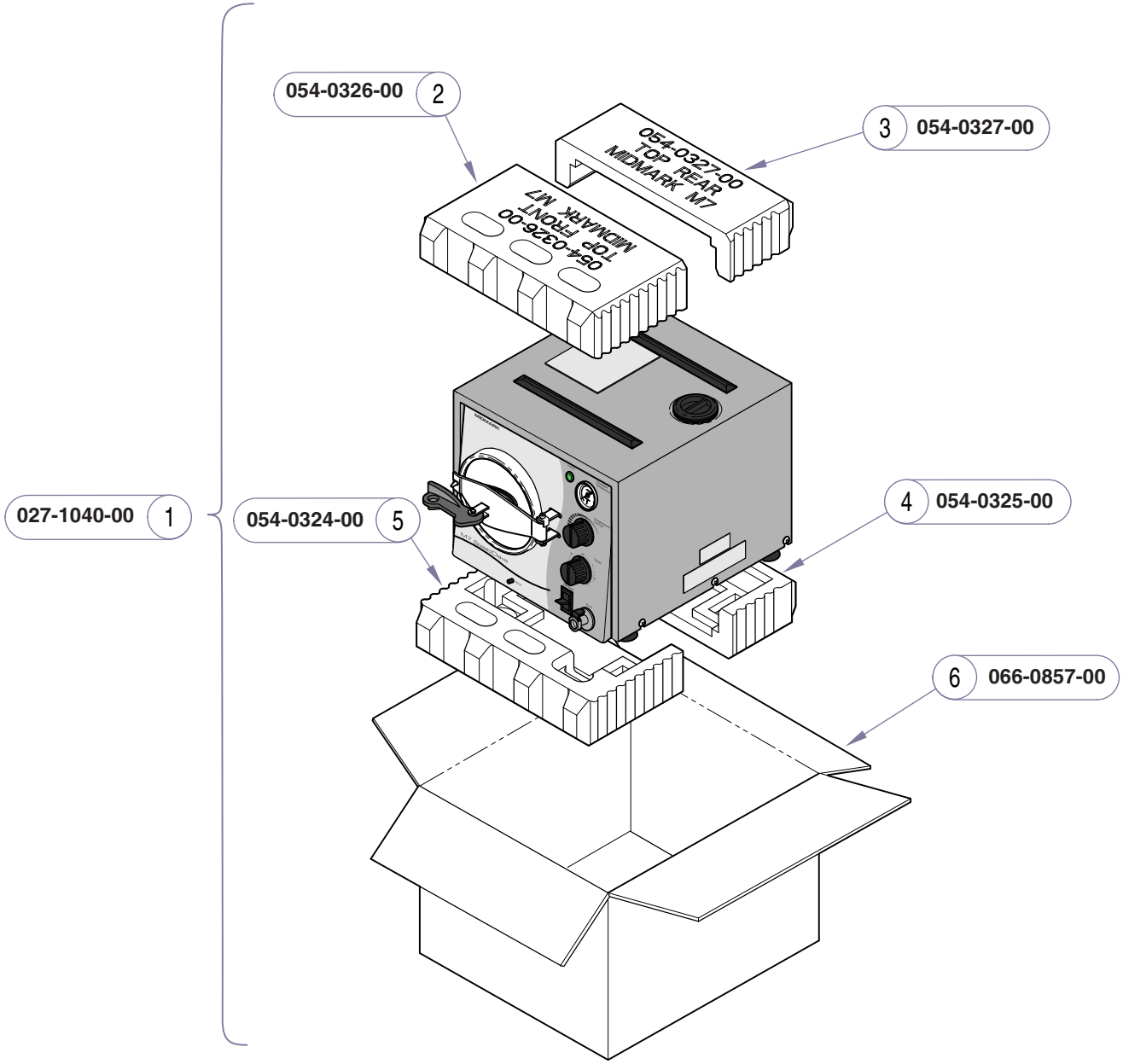
Refer To: **Page**

Operation & Troubleshooting A-1
Component Testing / Repair B-1
Access Procedures C-1
Wiring Diagrams D-1
Exploded Views / Part Numbers .. E-1



MA514703i

Item	Description	Qty.
1	M7 Packaging Kit - Generic *(includes items 2 thru 8)*	1
2	• Top Front Pad	1
3	• Top Rear Pad	1
4	• Bottom Rear Pad	1
5	• Bottom Front Pad	1
6	• Carton	1
7	• Sterilizer Cleaner *(not shown)*	1
8	• MSDS Sheet *(not shown)*	1

Always Specify Model & Serial Number

Models: ***ALL***
Serial Numbers:

Packaging

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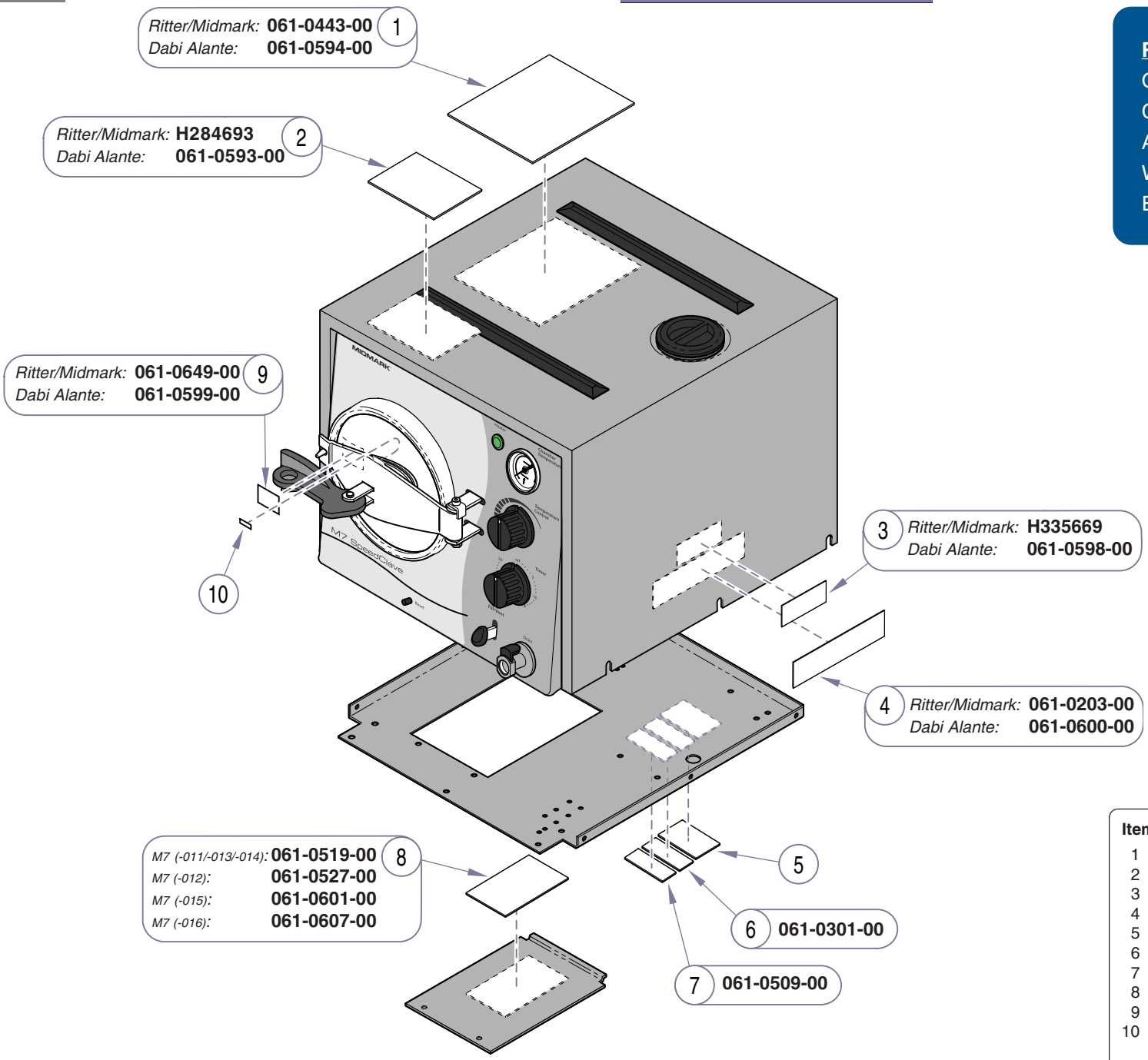

MA674300i

Refer To:	Page
Operation & Troubleshooting	A-1
Component Testing / Repair	B-1
Access Procedures	C-1
Wiring Diagrams	D-1
Exploded Views / Part Numbers	E-1

Item	Description	Qty.
1	Operating Instructions Plate	1
2	Danger Plate *(Dabi Alante only)*	1
3	Warning Label	1
4	Caution Label	1
5	Serial Number Label *(large- n/a)*	1
6	UL Label *(applicable units only)*	1
7	CSA Label *(applicable units only)*	1
8	Wiring Diagram Label	1
9	Caution HOT Label	1
10	Serial Number Label *(small - n/a)*	1

Always Specify Model & Serial Number

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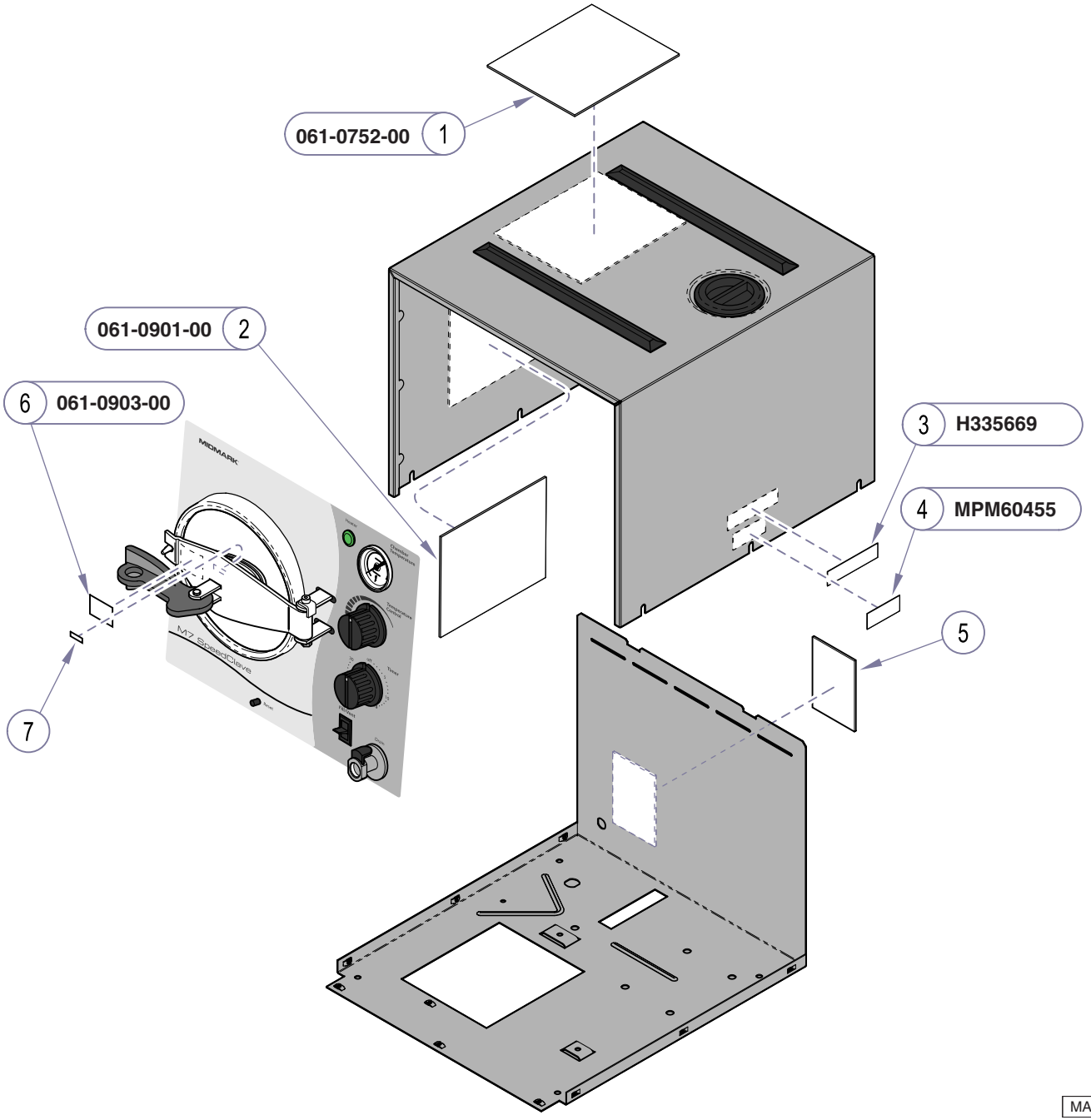
Refer To: **Page**

Operation & Troubleshooting A-1
Component Testing / Repair B-1
Access Procedures C-1
Wiring Diagrams D-1
Exploded Views / Part Numbers .. E-1



MA674302i

Item	Description	Qty.
1	Operating Instructions Plate	1
2	Wiring Diagram Label	1
3	Warning Label	1
4	Caution Label	1
5	Serial Number Label *(large- n/a)*	1
6	Caution HOT Label	1
7	Serial Number Label *(small - n/a)*	1

Always Specify Model & Serial Number

Models: ***M7 (-020 thru -022)***
Serial Numbers: ***all***

Labels & Decals

E-17.1

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Page Number	Paragraph/Figure	Description

ATTENTION: CUSTOMER SERVICE DEPARTMENT

SERVICE PARTS FAX ORDERING FORM

(Do not tear out this page. Photo copy this page for use only.)

IMPORTANT NOTES:

1) ***Use this form for all non-warranty orders only***. *Warranty orders must be telephoned in (1-800-643-6275).*

2) *FAX number to send order to: 877-249-1793*

3) *All emergency orders must be received @ Midmark by 1:00 pm EST.*

4) *All underlined headings should be filled in prior to submittal.*

ADDITIONAL COMMENTS:

DATE: ____ / ____ / _____ **TIME:** _____ am pm

METHOD OF SHIPMENT: _____

PRIORITY:

☐ **NON-EMERGENCY ORDER {to ship within 72 hours if part(s) are in stock.}**

☐ **EMERGENCY ORDER {to ship within 24 hours if part(s) are in stock.} [see note 3]**

DEALER P.O. #: _____

ACCOUNT #: _____

MODEL #:	**SERIAL #:**	**SALES ORDER #** (if applicable)

NAME: _____

ADDRESS: _____

CITY: _____ **STATE:** ____ **ZIP:** _____

CONTACT: _____

PHONE: _____

FAX #: _____

SHIP TO: _____

LINE #	PART NUMBER	QTY.	DESCRIPTION	COLOR (if applicable)

CREDIT CARD INFORMATION

CARD TYPE _____ **CARD #**____-____-____-____ **EXP. DATE** ____ / ____ / ____

NAME ON CARD _____ **SIGNATURE** _____

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